

MACWORLD

December 1984 \$4.00
Canada \$4.75

The Macintosh™ Magazine

Have You Hugged Your Mac Today?

*Take-Care Tips to Save Time and Money
and Make Your Macintosh Run Better*

▲▲▲▲▲▲▲▲
**Kids Draw
with MacPaint**

▲▲▲▲▲▲▲▲
Fat Mac Update

▲▲▲▲▲▲▲▲
**Three Hard
Disks Tested**

▲▲▲▲▲▲▲▲
**New Software
Announced**

Move Into MacStation™!

It's two walls and a roof where every Macintosh should live.

With plenty of storage space for a printer, disk drive, modem and manuals.

And a place your pet mouse can hide!

It's MacStation. An integrated workstation that's at home in offices, dorm rooms or dens. And a terrific way to save valuable desk-top real estate.

Adjustable shelves let you rearrange the rooms the way you like.

The roof doubles as a handy printer stand. With attic space to store continuous form paper.

Plus MacStation is ventilated. To keep Macintosh cool. And with the large front door, you can easily take Mac out for a walk.

You don't have to mortgage your house to buy one, either. Because you can get MacStation for only \$95* at your favorite Apple store.

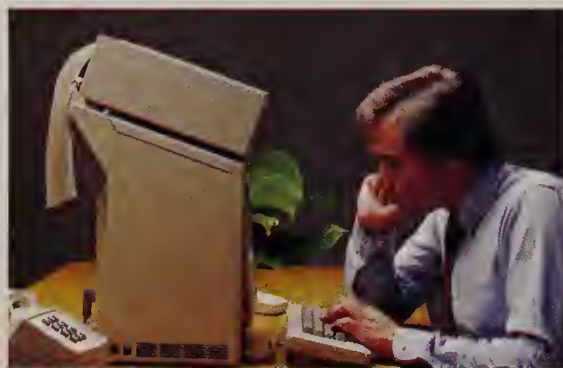
Give your Macintosh a good home!

For more information call:

1-800-547-4000, Dept. 407

(In Oregon or outside USA:

Call 1-503-684-3000, Dept. 407)



MicroRain™

*This is our suggested retail price. MicroRain's 2000 dealers nationwide set the actual selling price. Apple is a registered trademark and Macintosh a trademark licensed to Apple Computer, Inc.



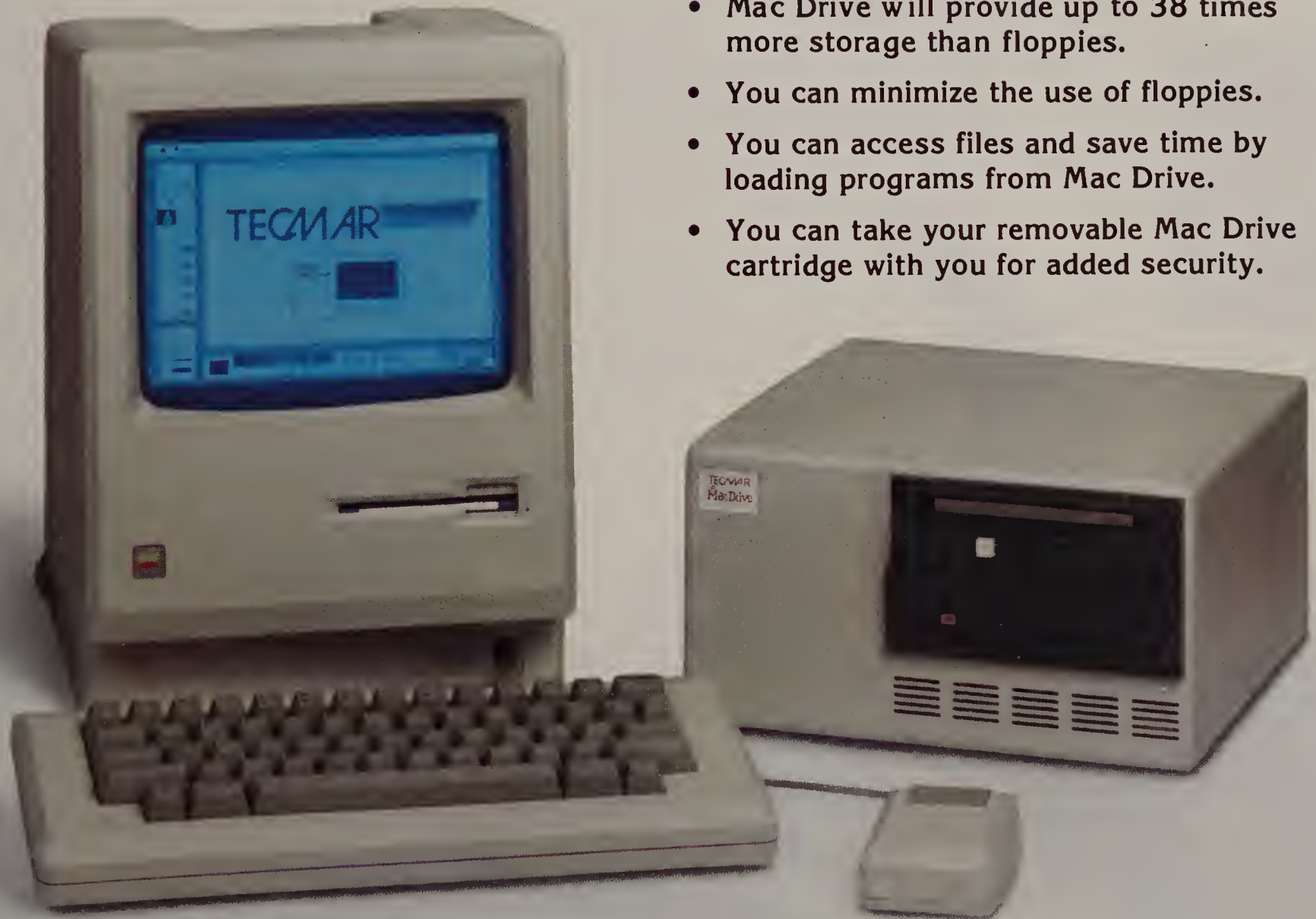
Tecmar Sweetens Macintosh[®] with Hard Disk Power

Mac Drive[™]

Tecmar's Mac Drive gives you a 10 megabyte fixed hard disk or a 5 megabyte removable hard disk. You can add a 5 megabyte removable hard disk to either of the above.

With Tecmar's Mac Drive . . .

- Your Macintosh runs much faster than with the built-in floppy.
- Mac Drive will provide up to 38 times more storage than floppies.
- You can minimize the use of floppies.
- You can access files and save time by loading programs from Mac Drive.
- You can take your removable Mac Drive cartridge with you for added security.



TECMAR
Tecmar Sweetens Apples[™]

Tecmar Inc. 6225 Cochran Road Solon (Cleveland), Ohio 44139-3377 Phone:(216)349-0600 Telex: 466692

MACWORLD

December 1984

The Macintosh™ Magazine

Getting Started

44 Have You Hugged Your Mac Today?

Gordon McComb

Presenting preventive maintenance tips for keeping your Macintosh healthy and active.

60 Get Info

Lon Poole

Macworld's tutor answers questions from readers about the Mac.

Review

70 Shifting into Overdrive

Danny Goodman

A detailed examination of three hard disk systems and the ways they can help improve your productivity with the Macintosh.

86 Microsoft BASIC Comes of Age

Sharon Zardetto Aker

The new MBASIC 2.0 enables you to write a variety of programs that take advantage of the Mac's unique work environment.

102 Going to the Oracle to Make a Sale

Bill Grout

An analysis of *Sales Edge*, a sales advisor that counsels you on dealing with tough customers.

116 Macware News

Edited by Erfert Nielson

Announcements of the latest developments in Macintosh software, hardware, and accessories.



Do you frequently see the "disk full" message on your Mac's screen? Read "Shifting Into Overdrive" on page 70 to find out whether you need a hard disk system.





Hands On

- 126 The Voyage of Sonar Sub**
Rob Dickerson
Journey 20,000 bytes under the sea with your Macintosh and an arcade-style game created with MBASIC 2.0.
- 142 Spreadsheets Printed in Style**
Lon Poole
Here's how to use *Multiplan*'s special printing options to customize your worksheets.
- 154 Open Window**
Edited by Daniel Farber
An exchange of Macintosh discoveries.

Community

- 166 Into the Mouth of the M.A.U.G.**
Jeffrey Young
A look at what it's like to join the information network society.
- 180 Macworld Gallery**
Edited by Erfert Nielson
An exhibition of Macintosh graphics, including a special display of children's art.

Photo/illustration credits

Apple Computer, Inc., 36; *John Hersey*, 34-37, 103; *The Image Bank*, 126-127, 166-167; *George Steinmetz*, 9, 15, 60; *Fred Stimson*, cover, 44-53, 70-73.

Columns

- 9 The Macintosh Is Here to Stay**
David Bunnell
- 15 Note Pad**
Ted Nace
The Vows of Software Development
- 23 Letters**
- 34 Macworld View**
Edited by Janet McCandless
News and notes for the Macintosh community, including a special update on the 512K Mac.

Indexes

- 195 Products**
196 Advertisers



If you're planning to purchase or upgrade to a 512K Mac, see this month's Macworld View on page 34.



MACWORLD

Editorial

Editor-in-Chief: Andrew Fluegelman
Editor: Kearney Rietmann
Associate Editor: Daniel Farber
Assistant Editor: Adrian Mello
Editorial Manager:
Janet McCandless
Editorial Assistant: Erfert Nielson
Copy Editor: Frances Grimble
Assistant to the Editors:
Heidi Mitchell
Contributing Editors:
Danny Goodman, Lon Poole,
Jeffrey S. Young

Art

Associate Publisher:
Jacqueline Poitier
Designer: Marjorie Spiegelman
Associate Designer: Dennis McLeod
Art Director: Bruce Charonnat
Design Associates: Leslie Barton,
Holly Douglas, Donna Sharee,
Molly Windsor-McLeod
Assistant to the Art Director:
Nan Cassady

Production

Production Director:
Herbert Linden
Senior Production Manager:
Frances Mann
Production Manager: Lee R. Trevino
Editorial Production Manager:
Ellyn L. Hament
Production Editor: James Felici
Ad Traffic Coordinator: Jayne Boyer
Telecommunicators: Mark L. Duran,
Susan M. Ford

Publishing

Publisher: David Bunnell
Special Projects: Susan Keller
Communications: Noreen A.
Browning
International: Karen Dowell
Assistants: Randi Glaser,
Jeffrey S. Glines

Sales

National Account Manager:
Rod Conklin
Marketing Services Manager:
Charles Abrams
National Sales Manager:
Penny Rigby
Eastern Account Manager:
Vincent Ivey

Circulation

Associate Publisher:
Cheryl Woodard
Circulation Director: Penny Ertelt
Director Single Copy Sales:
George Clark
Single Copy Sales Manager: Bill Cox
Dealer Sales Manager:
Mary Ruth Kristoff
Fulfillment Manager:
Russell D. Smith

Administration

Director: Janet McGinnis
Accounting Manager: Pat Murphy
Facilities Manager:
Joseph Wollenweber
Personnel Manager: Sarah Cox
Assistant to the President:
Christina W. Spence

Corporate

PC World Communications, Inc.

David Bunnell

Chairman

Bartlett R. Rhoades

President & CEO

Andrew Fluegelman

Vice President

Herbert Linden

Vice President

Jacqueline Poitier

Vice President

Cheryl Woodard

Vice President

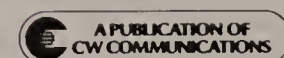
Volume 1, Number 6

December, 1984

Macworld™ (ISSN 0741-8647) is published monthly by PC World Communications, Inc., 555 De Haro St., San Francisco, CA 94107. Subscription rates for the U.S. and Canada are \$30 for 12 issues, \$50 for 24 issues, and \$70 for 36 issues. Canadian orders must be paid in U.S. funds. Outside the U.S. and Canada subscriptions must be prepaid in U.S. funds with additional postage at \$12 per 12 issues for surface mail or \$60 per 12 issues for airmail. For subscriber service questions call 800/247-5470 (in Iowa 800/532-1272) or write: Subscriber Services, P.O. Box 20300, Bergenfield, NJ 07621. Application to mail at Second Class pending at San Francisco. POSTMASTER: Send address changes to *Macworld*, P.O. Box 20300, Bergenfield, NJ 07621. Editorial and business offices: 555 De Haro St., San Francisco, CA 94107, 415/861-3861. *Macworld* is a publication of PC World Communications, Inc. *Macworld* is an independent journal, not affiliated in any way with Apple Computer, Inc. Apple is a registered trademark of Apple Computer, Inc. Macintosh is a trademark licensed to Apple Computer, Inc.

The following are trademarks of PC World Communications, Inc.: NotePad, Macware News, Open Window, Macworld Gallery, Macworld View. Macworld is a member of the CW Communications/ Inc. group, the world's largest publisher of computer-related information. The group publishes 55 computer publications in 24 major countries. Nine million people read one or more of the group's publications each month. Members of the publication group include Argentina: *Computerworld/ Argentina*; Asia: *The Asian Computerworld*; Australia: *Computerworld Australia*, *Australian Micro Computerworld Magazine*, *Australian PC World and Directories*; Brazil: *DataNews*, *MicroMundo*; China: *China Computerworld*; Denmark: *Computerworld/ Danmark*, *MicroVerden*; Finland: *Mikro*; France: *Le Monde Informatique*, *Golden (Apple)*, *OPC (IBM)*; Germany: *Computerwoche*, *Microcomputerwelt*, *PC Welt*, *Software Market*, *CW Edition/Seminar*, *Computer Business*, *Commodore Magazine*; Italy: *Computerworld Italia*; Japan: *Computerworld Japan*, *Perso ComWorld*; Mexico: *Computerworld/ Mexico*, *CompuMundo*; Netherlands: *CW Benelux*, *Micro/Info*; Norway: *Computerworld Norge*, *MikroData*; Saudi Arabia: *Saudi Computerworld*; Spain: *Computerworld/España*, *MicroSistemas*; Sweden: *ComputerSweden*, *MikroDatorn*, *Min Hemdator*, *Svenska PC World*; United Kingdom: *Computer Management*, *Computer News*, *Computer Business Europe*; United States: *Computerworld*, *Hot CoCo*, *In-Cider*, *InfoWorld, jr.*, *Macworld*, *Micro Marketworld*, *Microcomputing*, *PC World*, *PCjr World*, *Run*, *73 Magazine*, *80-Micro*

Printed in the United States of America.
©1984 PC World Communications, Inc.



The most BASIC.

Microsoft® BASIC is the language spoken by nine out of ten microcomputers worldwide. It's the language with the most programs written for it.

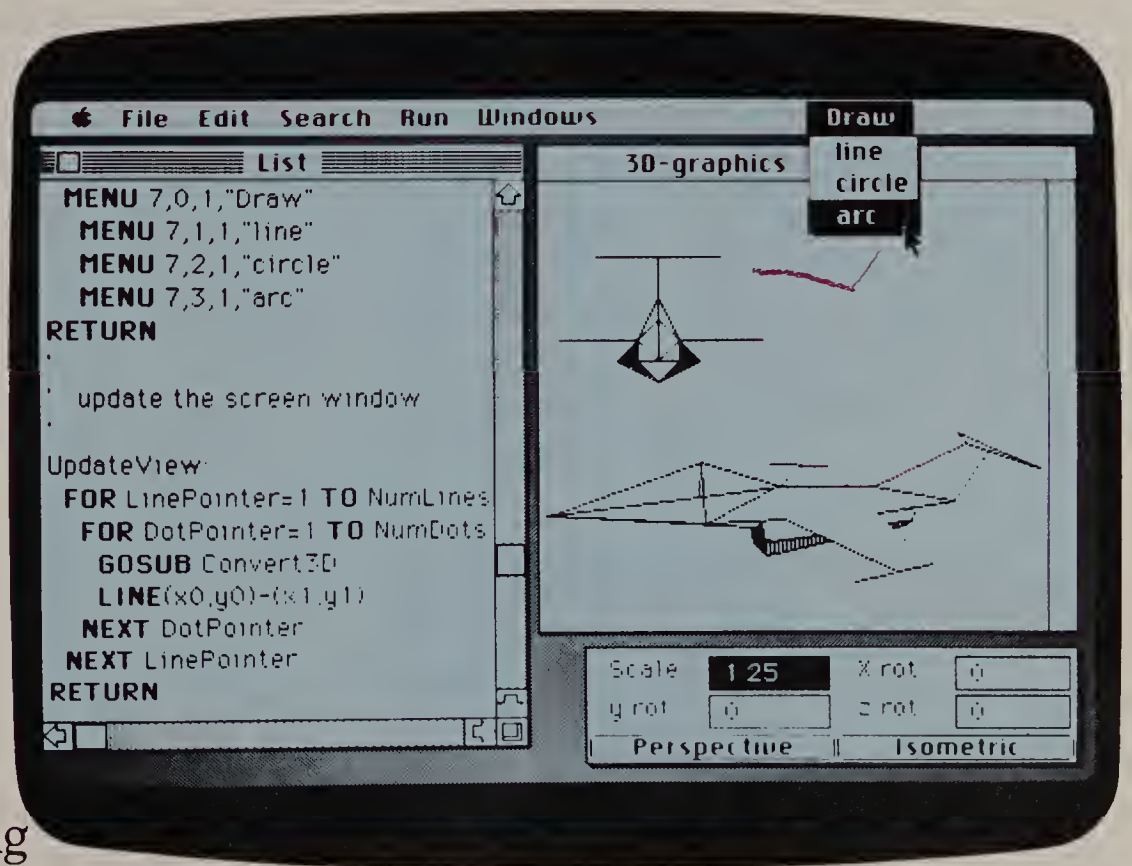
So if you want to access the power of your Macintosh™, only one language makes the most sense. Mac's first language, Microsoft BASIC.

Not only is it the industry standard, it's the most advanced BASIC for Macintosh. It lets you add mouse commands. Graphics. Windows. Change type fonts and styles. Customize menus. Incorporate music and sound effects. Write your own dialog boxes. Basically, it lets you take advantage of everything that makes Mac 'Mac.'

It makes editing programs as easy as cutting and pasting and pointing and clicking. Debugging is easier

than ever with the advanced trace command.

It's no wonder Microsoft is the most logical choice for the Macintosh.



MICROSOFT® We've The High Performance Software written more Macintosh programs than any other software company. Including Mac's spreadsheet, Multiplan®.

So if you want to get the most out of your Macintosh, call (800) 426-9400 for the name of your nearest Microsoft dealer. In Washington State, Alaska, Hawaii and Canada, call (206) 828-8088.

Microsoft and Multiplan are registered trademarks of Microsoft Corporation.
Macintosh is a trademark licensed to Apple Computer, Inc.

MICROSOFT

'Tis the season

Last season, you couldn't celebrate MacMania because there was no Macintosh.™ That's all changed now.

Out of respect for your unbridled love of the Macintosh (and ours, too), we've created even more insanely wonderful ways to enhance its remarkable performance. With five easy-to-use, useful and totally captivating products that make great gifts.

All designed to the Macintosh's high standards for quality and reliability. Priced to please the most discriminating Macintosh lover.

Mac•Daisywheel•Connection™

Now, with the Mac•Daisywheel•Connection, your Macintosh can print with any popular daisywheel letter-quality printer. Like the Apple Daisywheel Printer, the Brother (HR Series), the C-Itoh (Starwriter), the Daisywriter, the Diablo, the NEC Spinwriter, and the Qume (Letterpro and Sprint 11 Series) — just to name a few.

The Mac•Daisywheel•Connection gives you complete flexibility. You can keep your daisywheel and dot matrix printers connected

to your Macintosh at all times. Just point and click to the printer you want to use.

The Mac•Daisywheel•Connection is ideal for business correspondence, reports, legal documents and even spreadsheets. It lets you print a full 15" paper width. It comes complete with a program disk, a quick start-up guide and an interface cable. List price \$99.

Mac•Spell•Right™

With Mac•Spell•Right, you can easily eliminate all the woes associated with checking and correcting spelling. This powerful new application program automatically does the work for you. Get the power of Webster's Dictionary and Roget's Thesaurus with the click of a button. Because Mac•Spell•Right works directly within MacWrite™ and runs transparently while you work, you never have to switch back and forth between disks and programs.

Think of how your productivity will improve. It won't take nearly as long to check and edit documents once you add "Spell✓" to the MacWrite menu bar.

And you may even find yourself with a little extra time on your hands to expand your vocabulary. Mac•Spell•Right gives you alternate word choices, too.

List price \$89.

Mac•Epson•Connection™

Thanks to the Mac•Epson•Connection, you can now use Epson dot matrix printers with your Macintosh.* Our new driver for high quality dot matrix printers will drive you wild, especially when you see how graphic

~~silicon~~ ~~delete~~ ~~modern~~ ~~Rite~~ ~~Write~~ ~~ser~~ ~~drive~~ ~~Processor~~ ~~and~~

for MacMania™

your graphics look and how professional your texts look. Nothing could be simpler or faster (at 160 characters per second). And it takes only 30 seconds to transfer the software to your 3½" diskettes or hard disks.

The Mac•Epson•Connection is totally versatile, too. Anything you can print on the Imagewriter™ you can print on an Epson. The Mac•Epson•Connection is compatible with any software that runs between the Macintosh and the Imagewriter.

The Mac•Epson•Connection comes with a program disk, a quick start-up guide and an interface cable. List price \$89.

*The Mac•Epson•Connection supports a wide range of printer models from Epson, including the FX 80 and 100, the RX 80 and 100 and the LQ1500.

Mac•Turbo•Touch™

The Mac•Turbo•Touch is a new high-speed direct input device (or, if you will, a turbocharged "mouse") for your Macintosh. This is not meant to imply that the legendary love affair between mouse and man is over. Rather, for those of you who are ready for something that can respond as quickly as you do, there is now an exciting option. An option that reduces the time it takes to edit a document by 40%. An option that covers the same ground the mouse covers in one-third

the time and in one-fourth the desk space.

What's more, the Mac•Turbo•Touch is always right where you need it whether you're right- or left-handed because you can park it on either side of the keyboard. Where does it plug in? In the mouse port, of course.

Flexibility is only one of its many virtues. Responsive performance is another. The slightest touch of the gyroscopic ball positions the pointer quickly and accurately on the screen. Mac•Turbo•Touch makes MacWrite, MacPaint and any other software work better, faster and more precisely than before. List price \$129.

Mac•Memory•Disk™

The Mac•Memory•Disk lets you access more of the memory in your 512K Macintosh. It makes interaction between software applications ten times faster. It also lets you allocate a portion of the RAM (Random Access Memory) resident in your 512K

Macintosh and treat it like a disk. With the Mac•Memory•Disk, you now have immediate access to more memory. List price \$29.

MacMania Plus™

Other forms of MacMania are available. Like our Ten-Pack of blank 3½" diskettes made of totally certified media to protect your data. List price \$55.

'Tis truly the season for MacMania. Your local Apple Computer Dealer will be happy to show you the ways to celebrate MacMania with additional input and a demonstration. Or call toll-free: 1-800-MAC-5464. In California, toll-free: 1-800-421-0243. In Canada, direct-dial: 408-446-0797.



Assimilation Process™

Apple Imagewriter, MacPaint and MacWrite are trademarks of Apple Computer, Inc. Macintosh is a trademark licensed to Apple Computer. Mac Daisywheel Connection, Mac Epson Connection, MacMania, Mac Memory Disk, Mac Spell Right and Mac Turbo Touch are trademarks of Assimilation Process. © Assimilation Process 1984

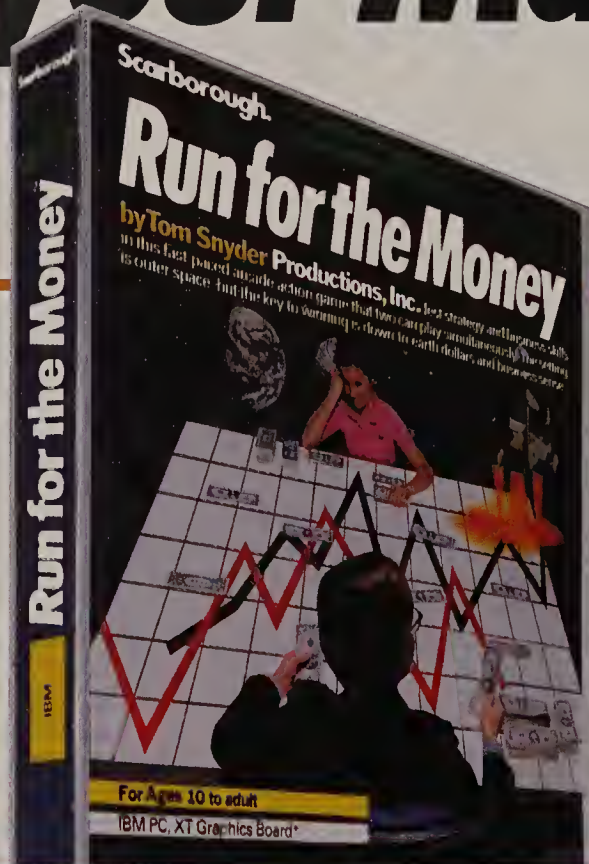
Circle 110 on reader service card



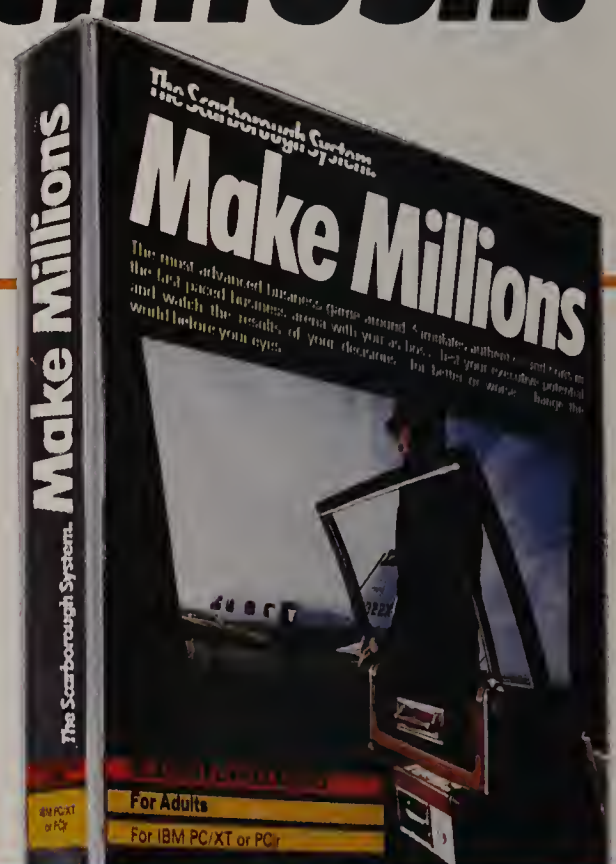
Oh my gosh, look what's new for your Macintosh!



MasterType™ by Bruce Zweig. At last, Mac owners can join the other 250,000 computer owners who have access to the fastest, most entertaining way ever of learning to type and improving speed and accuracy. The best selling educational program in America gives you arcade game action with exciting Mac graphics. Give it a try! Before you know it, you'll be a master typist on your Mac too.



Run for the Money™ by Tom Snyder. Learn to pursue profits in the real world as you escape from an alien planet. Based on economic models prepared by an MIT economist, teenagers learn and experiment with this fast-paced game that encourages sound business thinking. With graphics that look great on the Mac, lots of action, and a compelling scenario, Run for the Money is a game to be enjoyed again and again by youngsters or the whole family.



Make Millions™ by Tom Snyder. The adult business simulation game that tests entrepreneurial skills and strategies through "boom and bust". Make Millions gives aspiring capitalists all of today's management tools: stock quotations, market research, spread sheets, data base and consulting services. And, to create variety, you can "mouse your Mac" into different environments while you wheel and deal. Play Make Millions. See if you have what it takes to be a tycoon and make millions.

The Scarborough System.

You'll grow with us.

© Scarborough Systems, Inc., 25 N. Broadway, Tarrytown, New York 10591

Circle 133 on reader service card

The Macintosh Is Here to Stay

The Macintosh has established a new standard in personal computing



Thousands of Macintosh users have found that the Mac is an indispensable tool for business, education, and recreation. Yet many computer journalists and would-be personal computer gurus still question the Mac's ability to survive in the competitive personal computer market.

As the publisher of *Macworld* and its older sister magazine, *PC World*, I attend most of the major personal computer trade shows, conferences, and other events. Because I have broad experience in the industry, I'm amazed that the Mac is still questioned. It seems so obvious that the Macintosh has arrived. Over the past nine months, the Mac has clearly established itself as a successful alternative to the IBM PC. The steady increase in hardware accessories and software is reflected in *Macworld's* impressive increase in ad pages.

Our first issue (February) contained only 18 pages of ads, our fifth issue (November) had 80 pages, and this issue has 100—not a bad track record for a doomed machine.

Most computer magazine publishers will not look back on 1984 as one of their best years. Several publications, such as *ST.Mac*, *Softalk* for the IBM PC, *List*, *Personal Software*, *PC Age*, *Digit*, and *Jr*, have fallen off the rack and retired to archival heaven. Practically all computer magazines have experienced a dismal decline in advertising and newsstand sales.

And yet, in the midst of this publishing depression, *Macworld*, which owes its lifeblood to the Macintosh, has been the most successful computer publication of the year. We have achieved astonishing "sell through" in computer stores and on newsstands, while other magazines watched their sales drop to 15 percent of the market or less.

Of course, our success as a publication doesn't rest solely on the Mac's success. We are compelled to consistently deliver easily accessible, useful, and timely information to new and advanced Macintosh users—and to deliver that information in a package that is not only appealing, but on occasion downright beautiful. So far, our readers have voted us the number one publication covering the Macintosh. And they have placed enough faith in the Macintosh to establish it as a new personal computer standard, an equal to the IBM PC and the Apple II.

Unfortunately, computer critics tend to predict with blinders on. They can't understand why the Macintosh sells so well, and they continue to

moan about the lack of software for the machine. Actually, a wealth of exciting software is available for the Mac, and tons more is coming.

The 60,000 Macintosh users who bought their machines during the Mac's first 100 days are a select group. As the first people to adopt the Mac, they have often had to wait for promised innovations such as application programs, second disk drives, hard disks, and 512K of memory.

But such is the price of pioneering. The first IBM PC buyers suffered similar experiences. The operating system kept changing, the PC's first word processing program by IBM, *EasyWriter*, was initially confusing and full of strange bugs, and even the first release of *WordStar* for the PC was disappointing. Critics claimed that the PC would never have

enough software. The CP/M operating system was more widely accepted than PC DOS, and the PC's expanded memory was of little importance. Sound familiar? Instead of building on an existing standard, IBM had the nerve to think it could replace CP/M with PC DOS.

Two years later Apple decided it could counter the notion that all new personal computers had to be IBM compatible. The Macintosh was conceived not so much as a computer but as a desktop appliance with an intuitive user interface based on the mouse and pull-down menus. Had the Mac been PC compatible, it could not have possessed two crucial features—a small footprint and great graphics.

The Macintosh fits conveniently on most desktops with room to spare for the odds and ends of office work. In comparison, the IBM PC is a small tank. Since personal computers are starting to replace much traditional desktop paper work, they must be accessible. Like a

telephone, a personal computer should always be within reach—but not so reachable that you trip over it every morning.

The Mac's super graphics can enhance business reports and papers with charts and sketches. And by making everything print out as it appears on the screen, the Macintosh adds a new dimension to personal computing. Once you get a taste of the Mac, computing is never the same.

In many ways, the Macintosh is more revolutionary than the IBM PC was in 1981, because existing personal computer software cannot be easily converted for the Macintosh. Many of the PC's most popular programs were borrowed from the CP/M days, including such favorites as *WordStar* and *dBASE II*. Because the Mac's user interface is radically different from preceding interfaces, restructuring software for the Macintosh is extremely difficult.

However, when designed successfully, Macintosh software is usually of higher quality.

Because of these technical limitations, the Macintosh software base can't possibly blossom as fast as the IBM PC software base. Computer journalists who fail to recognize the Mac's distinctive qualities can easily make premature, negative declarations. To write great Mac software, programmers have to first abandon the piano for the violin, learn to play new music, and bring out a new sound. Just as it takes time to compose great music, it takes time to create good software. So just give the Macintosh a little time! It demands the best. □

MERRY CHRISTMAS GIFT



MACTILTTM

By ERGOTRON inc

AN ERGONOMIC STAND AS REVOLUTIONARY AS THE MACINTOSHTM

The Macintosh Mouse and Icon have ushered in a new standard in personal computing. Because Icons are integral to the Macintosh operation, good screen visibility is absolutely essential for optimum User performance and comfort. The screen is no longer just a display, but a tool as essential to the User as the Keyboard or Mouse. The new MacTilt is designed to elevate the Macintosh and allow screen adjustment to a viewing angle which is just perfect for you. As smooth as silk, the MacTilt can be easily adjusted with the touch of a finger to reduce

glare and provide the optimum in screen/icon visibility.

For a low \$99.95, MacTilt will convert your Macintosh into a professional ergonomic workstation which will allow you and your Staff to realize

the full potential of this revolutionary new Computer.

The MacTilt's unique design tilts 30° and rotates 360°. In addition, your Macintosh lifts easily on and off when used as a portable. To obtain your new MacTilt, visit your nearest Apple Computer Dealer or call or write:

ERGOTRON inc

P.O. Box 17013

Minneapolis, MN 55417, USA

(800) 328-9839 or (612) 722-9299

Ergotron Manufactures the World's Finest Computer Stand for a full Range of CRT Monitors and Portable Computers. MacTilt is a trademark of Ergotron, Inc. Macintosh is a trademark licensed to Apple Computer, Inc.



Circle 83 on reader service card

ODESTA HELI

An Interactive Information System
For Individuals With A Need To Know

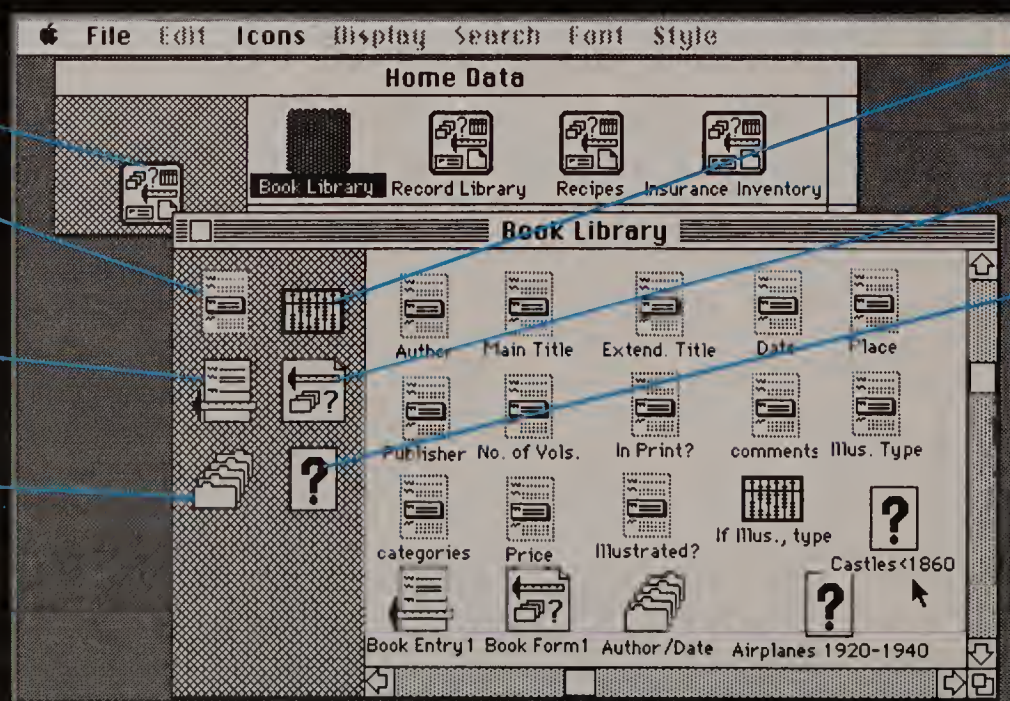
With Odesta Helix, you can model worlds of ideas, things, and relationships, and watch them live and interact upon your desktop. Odesta Helix is a new program – not an old program made to work on a new machine. It takes a new approach – letting you define and control the shape and form of information according to your own needs and style. Odesta Helix gives you a rich and powerful set of visual tools that lets you begin working immediately, without having to learn a programming language or battle with the restrictions of “spreadsheet” type thinking.

Relation icon
to set up different
“data bases”

Field icon represents
types of information

Template icon for
constructing and
changing forms

Index icon lets you get
at things in whatever
order you want



Abacus icon for
setting up calculations
and relationships

Form-view icon pulls
everything together

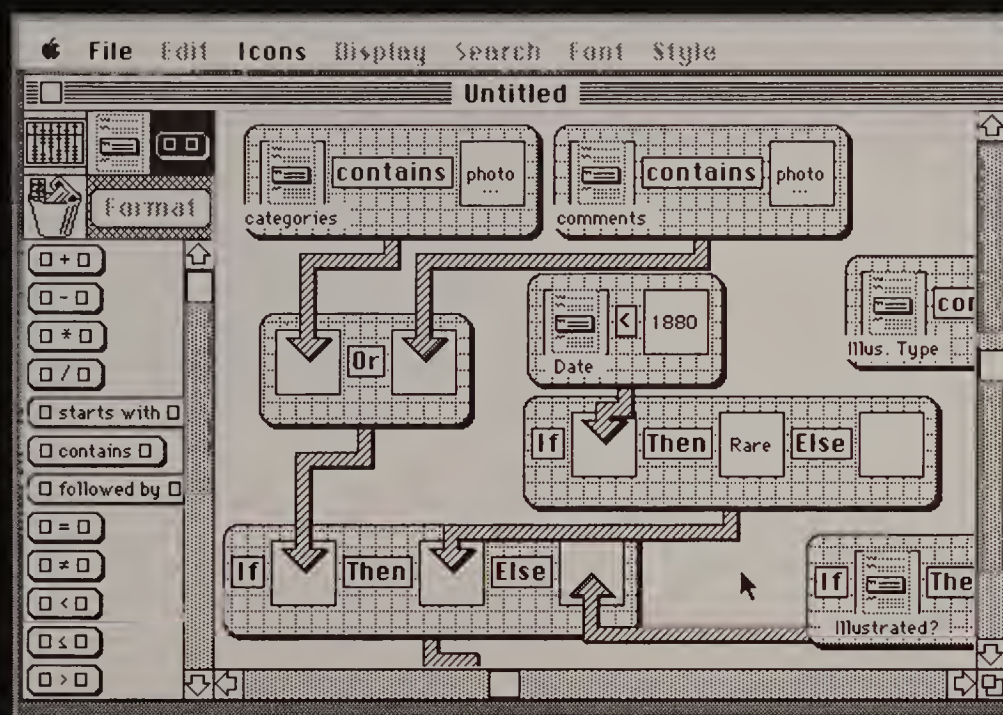
Query icon lets
you do interactive
searches

Odesta Helix uses icons (visual symbols) to represent ideas, relationships and functions as objects that you can easily manipulate. Create them by clicking on the icon-wells on the left, and dragging them to your desktop. Each opens to reveal deeper and deeper operations and values that may be invoked and shaped with the click of a mouse button.

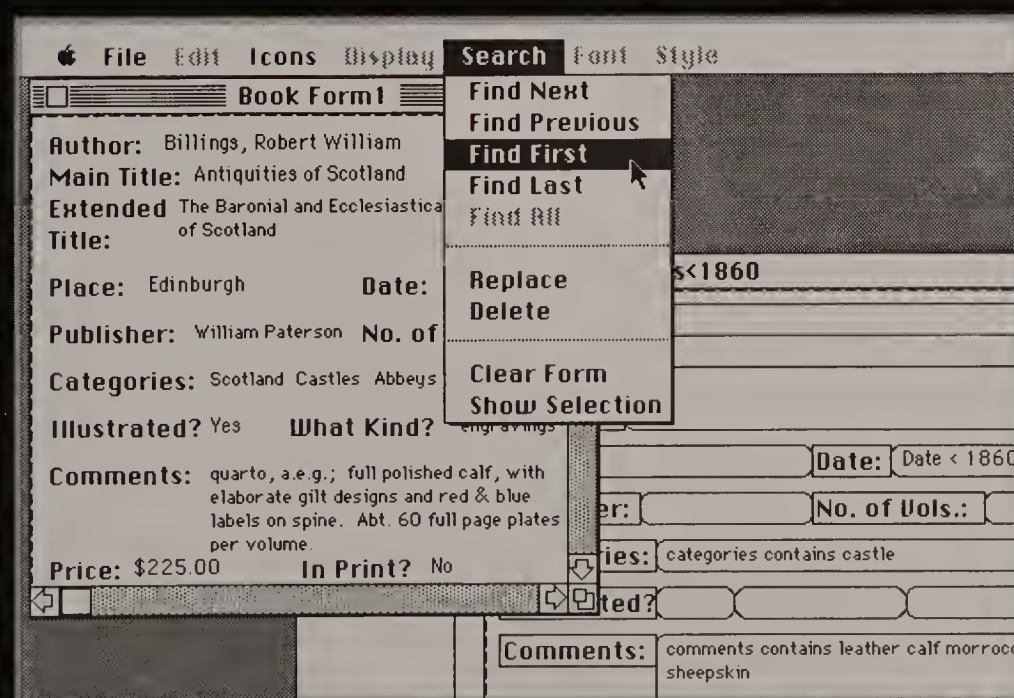
Odesta Helix™ & Macintosh™

The Next Step.

Tiles act as arithmetic, text, Boolean and date operators, functions and values.

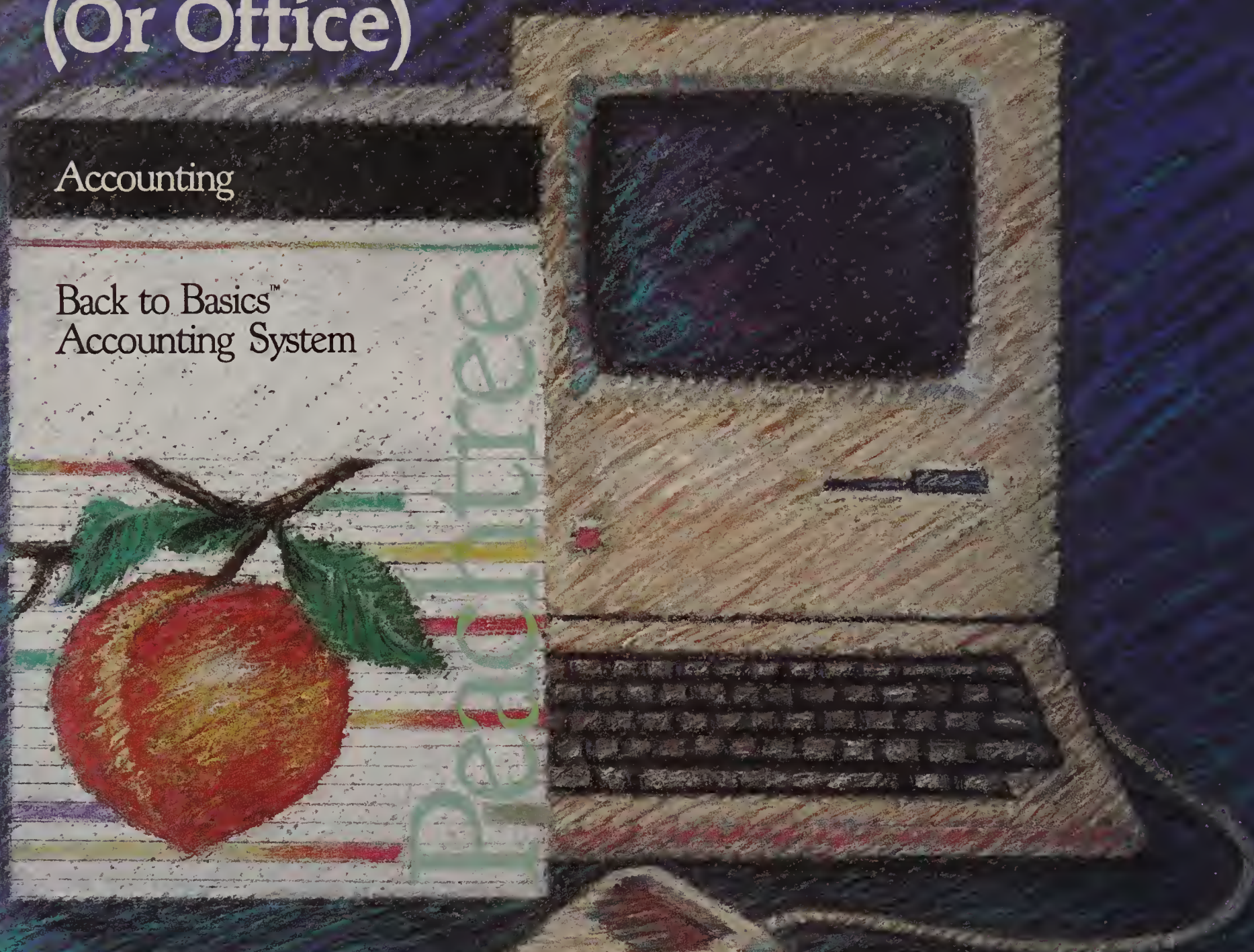


Visual building blocks let you set up even the most complicated statement or calculation and use it whenever you want to. Drag tiles out from the list at the left. Drop icons into the tile holes, or type in numbers or text. Connect the tiles by pulling arrows around. This whole calculation is represented by a single abacus icon that may be used on any form, and you may make up as many as you feel like.



Here is a form-view being used in conjunction with an interactive search form (query icon titled "Castles < 1860"). One aspect of the radically innovative design of Odesta Helix is that you can enter, query, edit, and print information all from one window – without having to shift from one mode or application to another. Another reflection of this dynamic design is that if you make a change in one window, you see the result pop-up in any open related window.

Introducing Accounting For Those With A Mouse In The House. (Or Office)



**Back to Basics Accounting System
by Peachtree Software® is now
available for the Macintosh.™**

It's named Back to Basics
because it is an uncomplicated,
easy-to-learn accounting system
for small businesses.

You don't need any accounting ex-
perience and barely need any computing
experience. The straightforward manual
teaches both accounting and computing
at the same time.

But make no mistake. This is a full-
featured series of interactive products
including General Ledger, Accounts
Payable and Accounts Receivable.

The first business accounting system
for the Macintosh, Back to Basics has
been enjoyed by owners of Apple® II+,

IIe and IIc all along.
In fact, you've probably
seen it featured in
Apple Macintosh adver-
tisements.

Uncomplicated—easy-to-
learn—yet full featured. That's
Back to Basics.

For more information, contact
your local dealer or Peachtree Software,
1-800-554-8900.

**America's Software
grows on the Peachtree.®**

Peachtree Software

Apple is a registered trademark licensed to Apple Computer, Inc.
Macintosh is a trademark licensed to Apple Computer, Inc.
Peachtree and Peachtree Software are registered trademarks of
Peachtree Software Incorporated, an MSA Company.

Circle 124 on reader service card

The Vows of Software Development

For software developers, the Mac is both irresistible and frustrating



Computer manufacturers know that the more programs run on their computers, the more computers they can sell. But only Apple has turned this idea into a religion. In fact, one employee in the company even has the job title “Software Evangelist.” He has worked since before the Macintosh was announced to make software developers into Mac disciples.

Perhaps no easier job than that of Software Evangelist ever existed. The Mac could probably have done its own proselytizing. All the Evangelist had to do was carry the 19-pound wonder from developer to developer, making sure everybody signed a confidentiality agreement in return for a chance to see and use the computer.

At Broderbund Software, co-founder Gary Carlston recalls the day the Software Evangelist came to call. Although Broderbund’s programmers had been doing their jobs, it seemed to Carlston that they were getting a little bored with the existing crop of computers. But when the Evangelist came by and showed them the Mac, the programmers all “started wagging their tails.”

Elsewhere the reactions were similar. Programmers reached behind their IBMs, Apple IIe’s, and Commodores and flipped off the power. Then they took out ballpoint pens and started filling out forms to petition Apple’s Certified Developer Program for membership.

Software developers who qualify for the program receive hardware and software tools at a sizable discount. The discount is an important benefit because both a Lisa and a Mac are required for programmers to create commercial quality software.

Certified Developers also get something more crucial than discounts on hardware and software: the chance to ask questions. They can attend seminars and apply for admission to an inner sanctum, the Registered Developer Program, which allows them a direct phone line to Apple’s technical experts.

When the mail sacks bulging with applications started arriving at company headquarters in Cupertino, the Developer Relations staff saw that devotion to the Mac was indeed spreading fast. The amount of interest was almost alarming. Far more people wanted to be Certified Developers than Apple could likely cope with.

As the months passed, the Mac continued to serenely draw ovals and polygons, stretch them this way and that, and fill them with pretty patterns. Observing the computer closely, Apple’s Developer Relations people decided that the machine must be contemplating the paradox that was also on their minds. If everybody was writing software for the Mac, why were so few programs actually available?

The answer, of course, is that creating software for the Mac is harder than most people expected. For starters, the user interface requires a different approach to writing programs than for other personal computers. Even converting existing software running on other machines is tricky and inordinately time consuming. To overcome these difficulties, many programmers developing software for the Mac need more than the right hardware and software. They need technical advice from the source.

Faced with literally thousands of applications to the Certified Developer Program, Apple had to make a hard deci-

sion. It could either try to help everyone and spread resources too thin, or it could concentrate on the companies with the best prospects for quickly getting programs on the market.

Naturally, Apple chose the latter course. The Certified Developer Program requires would-be developers to describe their experience in marketing software. Applicants have to tell Apple their plans for providing technical support for their programs. They must describe their experience in preparing user manuals and documentation. They must also send Apple a business plan. Developers who can't provide satisfactory information are not accepted into the program.

All this information is reasonable to require of any company that intends to market its software on a commercial scale. But what about the thousands of "small developers," the bright college students, kitchen table hackers, and other inventive spirits who, in addition to lots of third-rate junk, continue to come up with exciting new programs?

These people don't write business plans, nor do they know much about marketing software. They take their creations to a software publisher and let the publisher worry about the rest.

I was talking about the Macintosh software problem with a market researcher. "The Mac will never get 10,000 programs unless Apple finds a way to make life easier for the small developers," I worried out loud.

The market researcher seemed unconcerned. "Nobody can use 10,000 programs anyway," he said. "150 is more than enough. It's just as well to keep the junk off the market."

His point of view is not uncommon. It's true that a relatively small number of titles accounts for the bulk of the software that gets sold. But the promise of the Macintosh is to bring new people into computing. Achieving this promise requires that there be a smorgasbord of software to match the diversity of people's needs and interests.

To me, saying that 150 programs is more than enough is like saying we don't need libraries with thousands of books. Many library books, of course, rarely get checked out, for the simple reason that for most people they're not worth reading. But you never know when you'll find a gem.

People sometimes compare personal computers and the software that runs on them to other electronic equipment and media. The computer is like a television, they say, and the software is like a television show. Although these analogies make sense, they obscure one amazing difference between computers and other media.

With the personal computer, the same machine that runs the software can be used to create new software. It's as though the television that you use to watch last year's reruns could also create next year's hit comedy. And many computer users, unlike most television viewers, are involved in creating for their medium.

All in all, the Mac's first year hasn't been an easy one for software developers, but things are looking up. Languages and utilities are becoming available that will let programmers develop software without the Lisa. And entrepreneurs are taking the initiative to make sure that "technical difficulties beyond their control" don't stall their programming efforts.

In Los Gatos, California, William Parkhurst thought that other people besides himself might be having problems with getting their Macintosh pro-

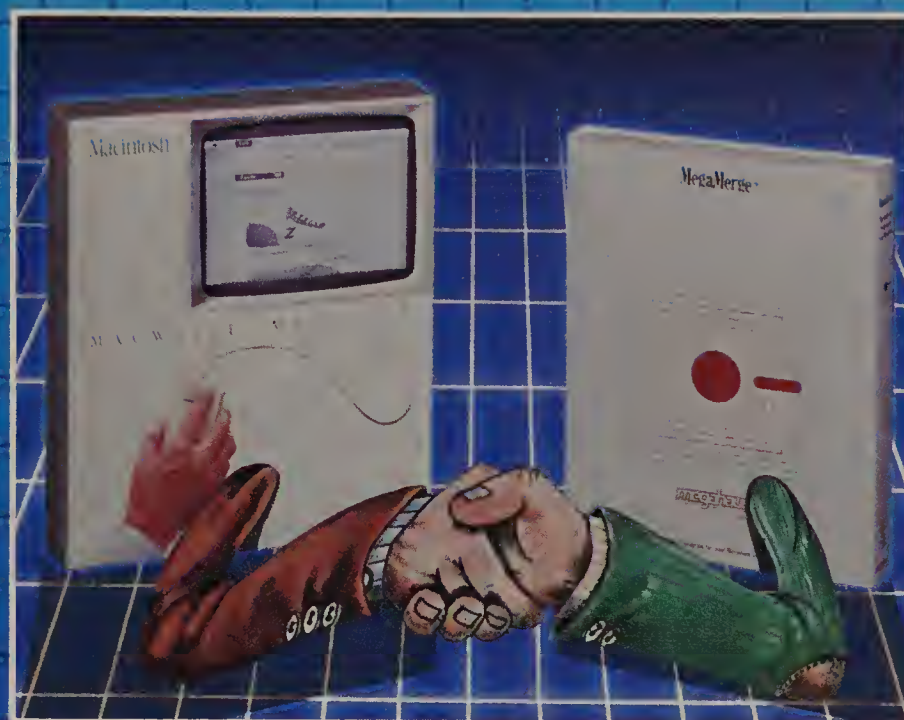
grams off the ground. Through a group called the Software Entrepreneurs' Forum, Parkhurst and others began meeting on a biweekly basis to share tips and techniques (see *Macworld View* in this issue).

The meetings grew fast and attracted the interest of the Apple Software Evangelist, who jumped at the chance to provide technical assistance to a group of 40 developers, rather than attempt to work with each one individually. As a result, the group now gets the help it needs from Apple.

As the Mac's popularity grows, so will the number of small software developers. Forming groups like the Software Entrepreneurs' Forum is one solution for those who aren't admitted to the inner sanctum. After all, even if the Software Evangelist can't help all such groups, neighborly aid may provide the answers. □

Ted Nace, a freelance writer in the San Francisco Bay Area, is writing a book on software marketing for Microsoft Press.

MegaMerge is here!

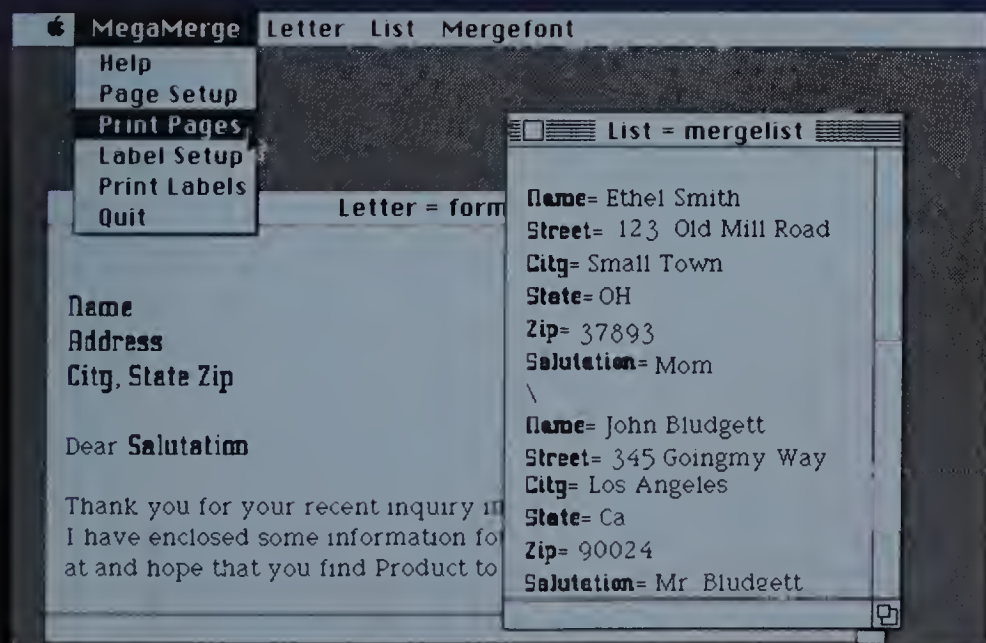


Megahaus proudly introduces MegaMerge...one of their many software products for the Macintosh that's available right now!

MegaMerge works hand-in-hand with Apple's MacWrite to:

- Create full mail list merging
- Print your mailing labels
- "Chain" your documents together so they print as one long document

With MegaMerge and MacWrite working hand-in-hand, you'll also be able to print hundreds of form letters to everyone on your mailing list and include standard "boilerplate" in all your contracts, letters, reports and other documents.



Chances are, if you now own Apple's Macintosh, you'll already have MacWrite. So why not take full advantage of Macintosh's technology with MegaMerge right now?

MegaMerge will work wonders for the Macintosh... and your business.

We'll even shake on it.



Megahaus has an entire family of software products for the Macintosh!

megahaus
WE MAKE COMPUTERS WORK HARDER.

Circle 86 on reader service card

5703 Oberlin Drive, San Diego, CA 92121/Phone (619) 450-1230

MOUSE MEETS MODEM.

The first mouse wanted a modem that would be very Macintosh-like. Icons and all.

The second mouse wanted a modem that could talk to its brothers at IBM.

The third mouse wanted a modem that could take over while its owner was sleeping.

The fourth mouse wanted a 1200 baud modem that could be inexpensively upgraded to 2400 baud.

The fifth mouse wanted a modem that worked error-free on anybody's phone service, even the discount ones he was afraid to use.

A difficult series of requests, to be sure.

But not impossible.

Because today, there is a modem that will make your mouse very, very happy. It's called MACMODEM. It's made just for the Macintosh. And it's the only modem that can satisfy mouse 1, mouse 2, mouse 3, mouse 4 and mouse 5.

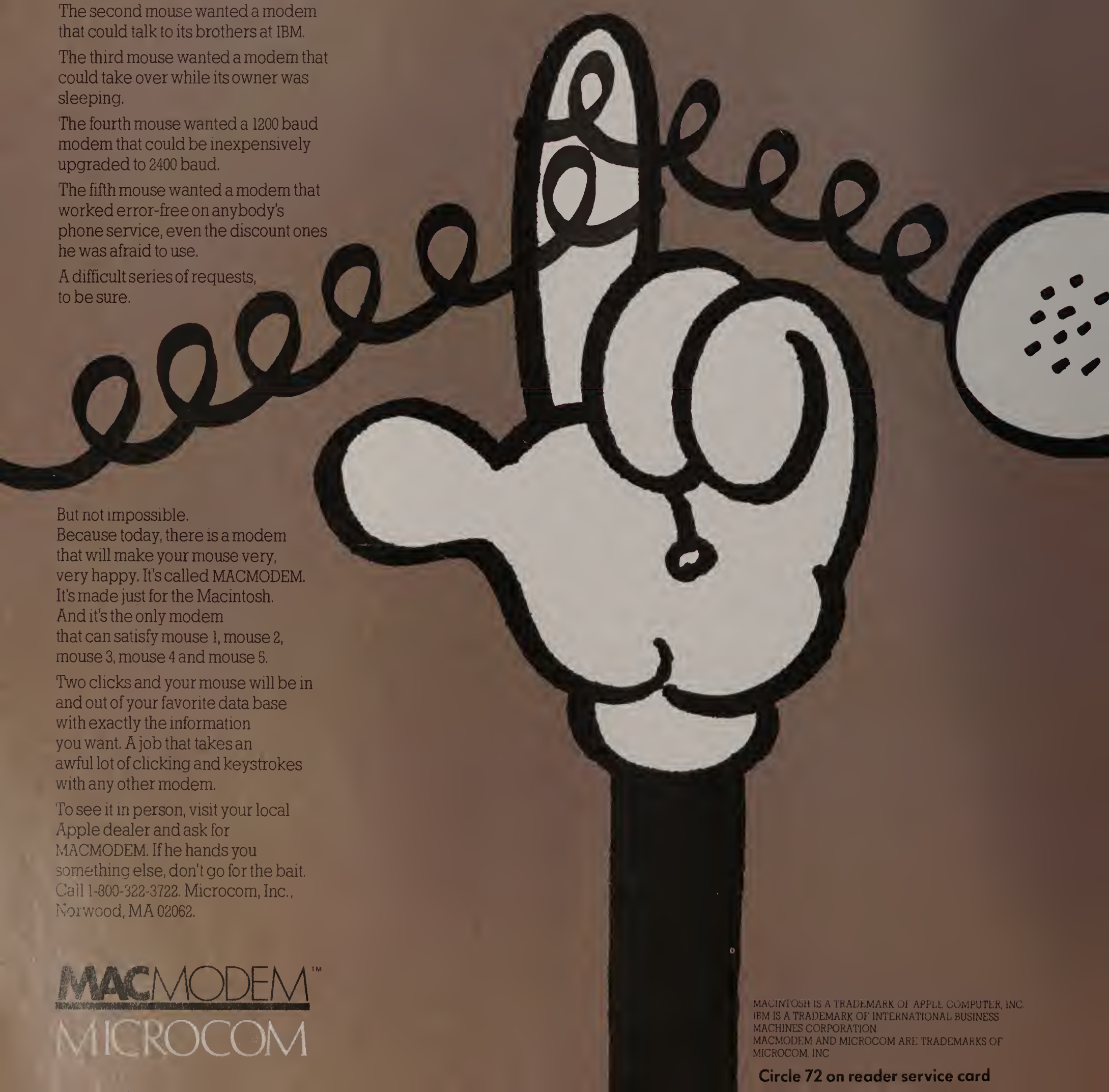
Two clicks and your mouse will be in and out of your favorite data base with exactly the information you want. A job that takes an awful lot of clicking and keystrokes with any other modem.

To see it in person, visit your local Apple dealer and ask for MACMODEM. If he hands you something else, don't go for the bait. Call 1-800-322-3722. Microcom, Inc., Norwood, MA 02062.

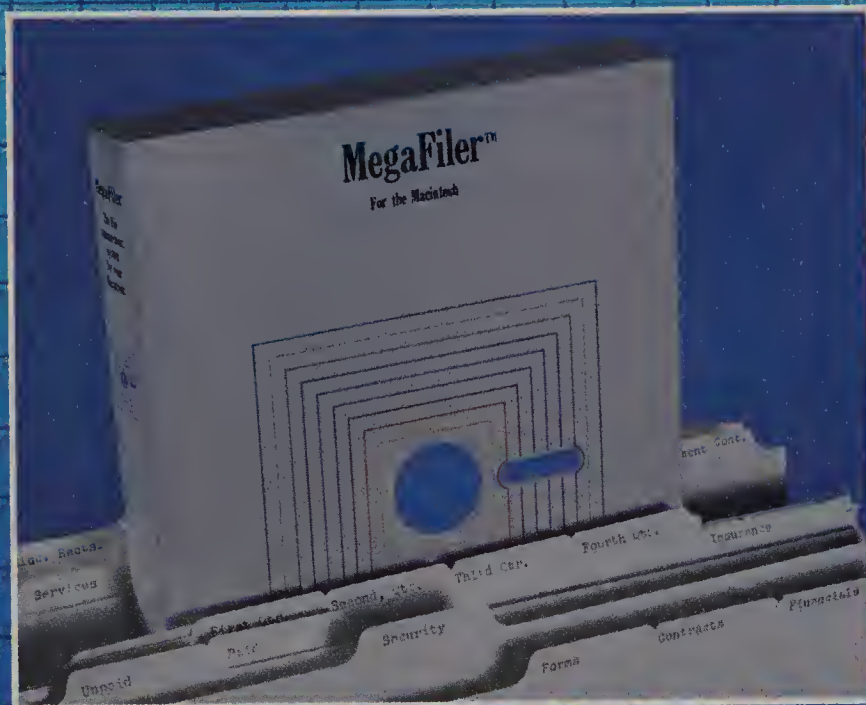
MACMODEM[™]
MICROCOM

MACINTOSH IS A TRADEMARK OF APPLE COMPUTER, INC.
IBM IS A TRADEMARK OF INTERNATIONAL BUSINESS
MACHINES CORPORATION
MACMODEM AND MICROCOM ARE TRADEMARKS OF
MICROCOM, INC.

Circle 72 on reader service card



MegaFiler is here!



If you own, or are about to purchase an Apple Macintosh, then you'll definitely want MegaFiler from Megahaus Corp.

MegaFiler takes **full advantage** of Macintosh technology from "A" to "Z" which, in turn, helps you create a file management system second-to-none!

MegaFiler will give you:

- Full windowing capabilities
- Total use of desktop accessories
- Complete and accurate editing commands
- Multiple file access
- Complete hand-in-hand compatibility with Apple's Macintosh

MegaFiler also comes with a complete library of ready-made files that will provide a myriad of applications such as:

- Mailing lists
- Sales records
- Business inventory
- Home inventory
- Stocks
- Customer orders

In addition:

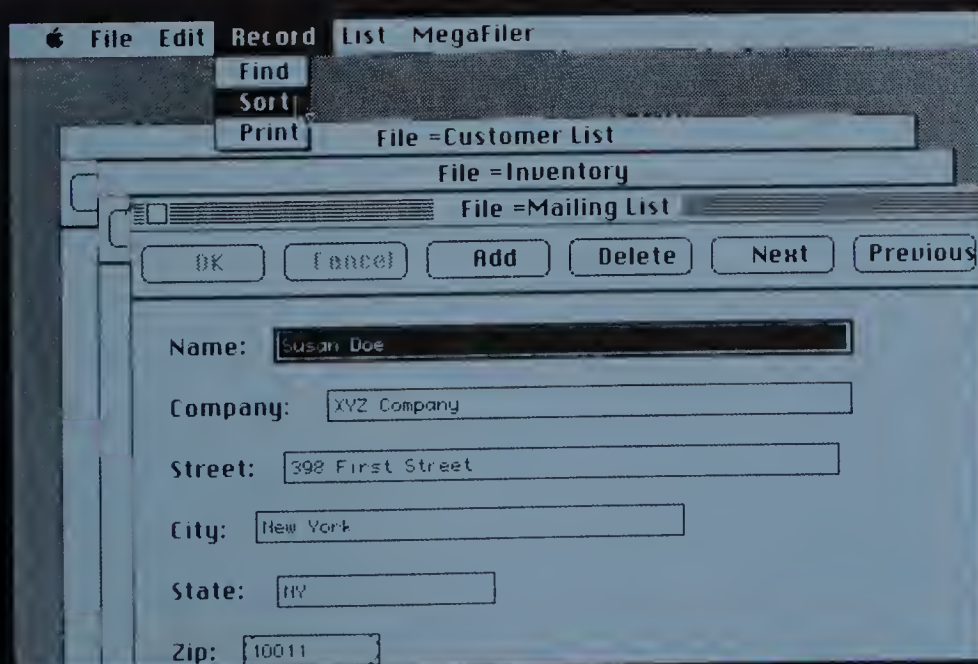
- Its 'file designer' lets you create your own custom files that can contain virtually unlimited fields arranged in any way you like!

- It works with our own MegaMerge, MegaForm and Apple's MacWrite to create alphabetized mailing lists and forms!
- You'll have access to full searching and sorting capabilities!
- You'll have multiple file access!

When you consider all of the MegaFiler benefits, doesn't it make you wonder how you could even get along without MegaFiler? Why not call the Apple dealer nearest you for a complete demonstration.

He'll make a believer out of you.

Megahaus has an entire family of software products for the Macintosh!



megahaus
WE MAKE COMPUTERS WORK HARDER.

Circle 87 on reader service card

5703 Oberlin Drive, San Diego, CA 92121/Phone (619) 450-1230

Your search for the ultimate fantasy has just ended. Presenting...

Legacy

Where fantasy becomes reality.

Legacy creates a world that is so realistic, at times it may not seem like a game at all.

As a young magician, you begin a quest in search of a mystical orb which is believed to be located in a legendary castle. You control your actions through commands which are in the form of full English sentences. Only a cunning, resourceful player will be able to overcome the life-threatening obstacles that block his path.

The special features of **Legacy** make it an incredibly realistic adventure. These include the most detailed graphics to ever appear in an adventure game, full-sentence command acceptance, and rich descriptions of the surrounding scenery. Created for you by a team of graphic artists, writers, and programmers, **Legacy** promises to be the most fascinating fantasy you'll ever take part in. For an entertaining adventure in a magical world, embark upon the perilous journey that awaits you in **Legacy**!



We turn fantasy into reality.

CHALLENGER SOFTWARE

18350 Kedzie Avenue
Homewood, Illinois 60430
(312) 957-3475

A two-disk Macintosh adventure—suggested retail price \$39.95
© 1984 Challenger Software Corporation
Macintosh is a trademark of Apple Computer, Inc.

Circle 120 on reader service card

MegaForm is here!



Do you fancy yourself as a designer?

With MegaForm working hand-in-hand with your Macintosh, you'll be able to design any kind of a form that fits your needs...**easily!**

MegaForm is a totally new kind of program. It's like a spreadsheet, graphics package, database, forms generator, and report generator...all rolled up into one!

MegaForm lets you design and create any kind of form you like, such as: **• Invoice Forms. • Order Forms. • Special Report Forms** and more! These forms can also include any kind of graphic image you like, even pictures you've created with MacPaint and MacDraw!

Once you've designed the form, you can tell MegaForm to automatically fill out the form using information stored in your MegaFiler database.

MegaForm is powerful enough to make MegaFiler a relational database!

Plus, MegaForm gives you all of these other advantages:

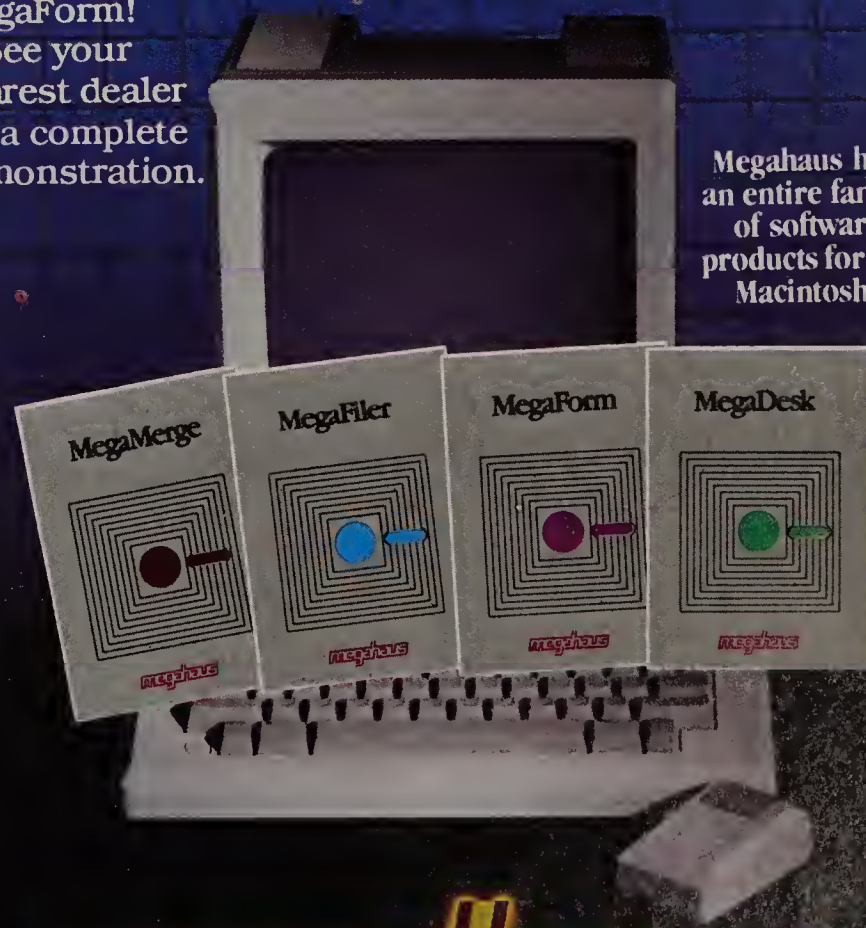
- Full use of the Macintosh environment, including windows, fonts, icons, desktop accessories.
- Sequentially numbers your forms and stores them for future reference.
- Automatically calculates information like a spreadsheet.

- Prints multiple copies of your forms — each with a different title.
- Gives you several ready-made forms that you can use right away.
- Gives you a selection of business graphic designs to include in your forms.

If you're planning to purchase, or if you already own a Macintosh, you'll be amazed at what it will do with MegaForm!

See your nearest dealer for a complete demonstration.

Megahaus has an entire family of software products for the Macintosh!



Invoice		#YZ Corporation	No: 27812
John Doe 123 Main Street #10 Los Angeles, CA 91001		Date: August 30, 1984 Invoice No: N3982 Customer No: 4093	
Qty	Description	Unit Cost	Total
12	MegaMerge	125.00	1500.00
9	MegaWriter	99.95	899.55
Total		2399.55	
Tax		143.97	
Amount Due		2543.52	

megahaus
WE MAKE COMPUTERS WORK HARDER.

Circle 88 on reader service card

5703 Oberlin Drive, San Diego, CA 92121/Phone (619) 450-1230

Maccessories™ make a good thing even better.

The Macintosh™ is easy to use. Maccessories from Kensington Microware make it easier.



First in the Maccessories family of enhancement products is the **Swivel**. A slim swivel base that attaches underneath the Macintosh, making it easier to reposition the computer.

It goes everywhere the Macintosh goes, even inside the carrying case.

The **Surge Suppressor** is a replacement power cord, providing UL listed surge suppression and line noise filtering for the Macintosh. It fits easily into the carrying case, so your Macintosh is protected no matter where you take it.



There are two anti-static **Dust Covers** in the family. One protects your Macintosh and keyboard. The other takes care of your Imagewriter.

Leave your delicate, intelligent modem at home. The **Portable Modem** is the perfect traveling companion for the Macintosh. It's small, sturdy, battery powered, weighs less than a pound and even has its own carrying case. The Portable Modem operates at 300 baud with any communications software.



The **Control Center**, styled to fit underneath the external disk drive, provides fingertip control over your whole system. There's a master switch to power the whole system on and off, and separate switches for a printer, modem and one auxiliary device. It also protects your whole system from power surges, line noise and static shocks.



The **Universal Printer Stand**, for the Apple® Imagewriter™, also fits most other dot matrix printers. It raises your printer 1½" from the desk at the front and 4½" at the back, an angle that allows you to monitor your printer's performance more easily.



By raising your printer a few inches from the desk, the Universal Printer Stand solves the problem of where to store your paper. Several hundred sheets are accommodated neatly underneath.

The **Disk Case** provides safe storage for 36 Macintosh disks. And it comes with a handy packet of spare disk labels.



There is more to Maccessories than hardware.

Maccessories Graphic Accents for Business is a collection of business icons. Use them to illustrate reports, design letterheads, spice up memos, or create invitations.

Maccessories Type Fonts is a series of type fonts in sizes of 15 point type and larger. Perfect for headlines, bulletins, anywhere you need a larger typeface. Each disk includes three fonts in various sizes and a selection of business icons.

Maccessories Quick Cursor is a Utility Program that allows you to designate any four keys or combination of keys on your Macintosh as cursor controls. You no longer have to take your hands off the keyboard while typing and fumble for the mouse just to move the cursor.

Available at Apple dealers everywhere. For more information contact Kensington Microware Ltd., 251 Park Avenue South, NY, NY 10010, 212-475-5200, Tlx: 467383 KML NY.

Circle 11 on reader service card

**K KENSINGTON™
MICROWARE**

Trademarks: Maccessories/Kensington Microware
Apple, Macintosh, Imagewriter/Apple Computer Inc.
Fonts by Xiphias © 1984 Kensington Microware



Letters

Discovering MacFORTH

As a new Macintosh owner, I was anxious to develop software for the Mac and was elated to find MacFORTH [see "The MacFORTH Dimension," November]. I'm currently using version 1.1 and find it to be well supported, well documented, and a joy to use. To programmers who haven't tried MacFORTH, I say that you're passing up an ideal tool for exploiting the power of the Mac. MacFORTH's speed, flexibility, and Toolbox routines make it an impressive language.

I also came across a bug in the Mac's desktop Control Panel. While the date is being set, the clock stops and loses time in the process. However, if the date is set in the Alarm Clock, the time is not affected. Apple should have caught this long ago.

Dave Hirsh

Oakmont, Pennsylvania

The Sinister Computer

The Macintosh is a breakthrough computer in many ways, one of which has yet to be mentioned in your pages. The Mac is especially friendly to left-handers. Naturally there are some right-sided characteristics that a left-handed per-

son does not fail to notice.

Disks are inserted on the right and the mouse port is on the right side of the back of the machine. However, left-handers can route the mouse around the back to the left of the machine (a *sinister* rearrangement that I enjoy doing to Macs at computer stores). They can use the programmer's switch (located on the machine's left side, thank you) to reboot the Mac when needed. Being able to use the mouse with the left hand allows the left-hander added (gulp) dexterity when working with the Macintosh.

But perhaps the detachable numeric keypad is the best touch of all for a southpaw. If the Macintosh had the same keyboard as the Lisa, the numeric section would be on the right. A left-handed person would be crossing hands as often as a pianist performing a Chopin étude. At least with a Mac the keypad can be located on the left side of the main keyboard, even though the crossed wires look a little awkward.

Paul Schroeder

Iowa City, Iowa

An Author's Reply

I must compliment Evelyn Spire on her unbiased review of the major Mac books on the market. I did note a few errors in her review of *Introducing the Apple Macintosh* by Ed Connolly and Philip Lieberman, which she compared to *The Apple Macintosh Book*, by Cary Lu [see "The Macintosh Between Covers," July/August].

Ms. Spire mentions that Cary Lu's book is the "only one up to date enough to be rid of the 'alternate disk' icon." A careful review of our book would have revealed that all the pictures and illustrations were up to date—reflecting the final production version of the Macintosh software, including the Finder.

The only known error in our book is the appendix on the disk utilities that were not included in the Mac at the last minute. I feel that with this exception (and a flipped illustration) the book is quite an achievement considering that it was the first one available for the Mac, beating all others to market by six weeks.

Our aim in writing the book was to share our excitement and enthusiasm with people contemplating the purchase of a Mac—not to provide a blow-by-blow description of the architectural trade-offs made by

the machine's designers. For this information, I recommend the extensive and well-written technical information available from Apple.

Philip Lieberman

Los Angeles, California

We stand corrected.—Ed.

Software for Writers

About six weeks ago, I purchased a Macintosh, primarily to assist me in writing short stories and poems. I immediately found that it was far superior to any typewriter I'd known.

As computers have a tendency to do, the Mac jostled my imagination. I began to think of software for the Macintosh that would further assist writers. I would particularly like to see an on-line dictionary and thesaurus, a spelling checker, and a word counter. When I looked for these applications at local computer shops, I was told that they were currently unavailable. Do you know of any plans to produce such software?

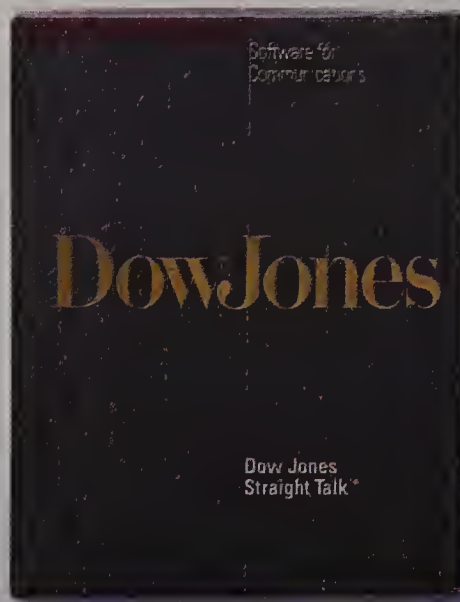
Billy Moore

Zionsville, Indiana

Introducing Dow Jones Straight Talk™

Now there's smart software™ for the Macintosh.

Think of it. Now there's software as smart as the Apple® Macintosh™ computer. Dow Jones Straight Talk™ offers you all the facts in Dow Jones News/Retrieval® and the other leading information services. With Straight Talk, you get the exact information you need when you need it.



Dow Jones Straight Talk is a trademark of Dow Jones & Company, Inc. Dow Jones News/Retrieval is a registered trademark of Dow Jones & Company, Inc. Smart software is a trademark of Dow Jones & Company, Inc. The Information Game is a trademark of Dow Jones & Company, Inc. Apple is a registered trademark of Apple Computer, Inc. Macintosh is a trademark licensed to Apple Computer, Inc. Copyright © 1984 Dow Jones & Company, Inc. All Rights Reserved.



The MacGAS glossary and spelling checker, which includes antonyms and synonyms, is available from Applications Unlimited. Another spelling checker, Mac Spell Right, can be installed in disk-based MacWrite; a thesaurus is available for two-drive systems. Mac Spell Right can be purchased from Assimilation Process. For further information on MacGAS and Mac Spell Right, see Macware News in this issue.—Ed.

More Software for Writers

I use a Macintosh and enjoy it immensely. However, I have noticed a few things that could be added to *MacWrite*.

When I was in graduate school, I wrote a lot of research papers that were footnoted. It is conventional to place footnotes at the ends of such papers because it is so difficult to place them at the bottoms of the appropriate pages. If a *MacWrite* "footnoter" were developed that was similar to the "footer" but unique to every page, writers could place footnotes on the pages where they belonged. Long footnotes could be carried over to the next page. This would improve the readability of research papers and keep the footnotes from being lost.

*Richard McHenry
Houston, Texas*

Get an "A" on your Paper.

It's one o'clock in the morning. Your term paper on the American Revolution is due at 8 a.m. Where was the misnamed Battle of Bunker Hill *really* fought? It could be the difference between an "A" and a "B".

Now there's smart software™ for the Macintosh™ computer.

With Straight Talk, the smart software from Dow Jones, you can use an electronic encyclopedia to find the historical fact you need. Even if it's the fact that on June 17, 1776 the Battle of Bunker Hill was fought on Breed's Hill.



Dow Jones Straight Talk™

Apple is a registered trademark of Apple Computer, Inc. Macintosh is a trademark licensed to Apple Computer, Inc.

Circle 69 on reader service card

Microsoft Word for the Macintosh allows you to place footnotes either at the end of a document or at the bottoms of the appropriate pages. See "The Word from Microsoft," July/August. —Ed.

No More Flipping

I think that you are doing an excellent job with *Macworld*. In fact, I have found so much useful information in it that I would like to suggest that you publish a comprehensive index each year. I have worn my first three issues precariously thin from constantly flipping through them to find information that I know I read there somewhere.

Fred Sauter
Rochester, New York

We will publish the first annual *Macworld* index in the January 1985 issue. —Ed.

An Alternative to Get Info

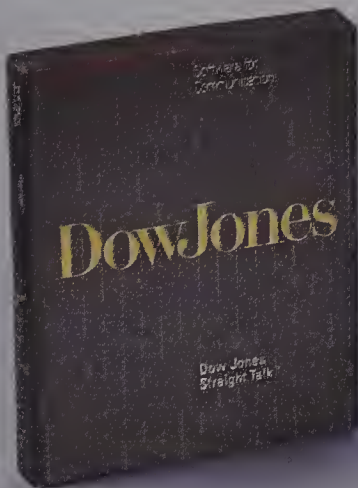
In "Clean Up Your Electronic Desktop" [May/June], Daniel Farber says that you should "keep your file names short and concise. Unless you have only a few files on your desk-

Get that Big Promotion.

In half an hour, your boss is due to finalize a merger with a company you have doubts about. His career rides on this deal. How can you change his mind before it's too late?

Now there's smart software™ for the Macintosh™ computer.

With Straight Talk, the smart software from



Dow Jones, you can get the lowdown on a company without ever leaving your office. You might even discover a revealing fact that saves your boss's job and earns you a new one.

Dow Jones Straight Talk™

Apple is a registered trademark of Apple Computer, Inc. Macintosh is a trademark licensed to Apple Computer, Inc.

Play it Smart. Play the Information Game™ and get \$60 off Dow Jones Straight Talk™ and Apple® Modem.

Play the Information Game at your authorized Apple® dealer. Answer five questions on the Macintosh™ computer using Straight Talk. Show us how smart *you* are.

Play the Information Game and buy Straight Talk and we'll give you \$10 off Straight Talk and \$50 off Apple Modem.* It's a deal smart people can appreciate. One that will make you a winner — whatever your information game.



Dow Jones Straight Talk™

For the name of the participating authorized Apple dealer nearest you, call 800-257-5114 New Jersey, Alaska, Hawaii, and Canada 609-452-1511

*Rebated from Dow Jones and Apple with proof of purchase while supplies last.
Apple is a registered trademark of Apple Computer, Inc. Macintosh is a trademark licensed to Apple Computer, Inc.

Circle 69 on reader service card

top, you'll have to move some of your file icons around to make the names legible."

This technique doesn't work for me. I prefer to give rather long names to my files so that I can tell at a glance what information they contain without using the Get Info command. First, I arrange my icons close to each other so that they all fit on one screen. This arrangement causes file names to overlap, but if I need to see a file name I simply click once on the icon. The Finder then highlights the icon and the name, even if they are covered up—and I don't have to move the icon at all. This way, I can look at several file names in the time the system takes to execute one Get Info command.

*David Simpson
Mountain View, California*

An Excellent Companion

I was one of the first people in Topeka to purchase a Macintosh, and I am highly satisfied with my decision. Unfortunately, while I had enough savvy to make an early buying decision about the Mac, I hesitated on getting a copy of *Macworld*.

I figured it would take a while to truly master my machine, and I incorrectly assumed that reading your publication would take precious learning time away from my first months with the Mac. I

INTRODUCING

Micro-Design's Hard Disk Systems For Macintosh™

Speed up your Mac by 400-600%,
Add up to 20 Mbytes of storage,
AND, Keep your Mac working for you while you
print! (Micro-Design built in a printer buffer!)

Features:

- Runs **4 to 6 times faster** than floppy drives
- **Built-in Printer Buffer**
- Available in 7 configurations, including combinations of fixed and removable hard disks
- Applebus® compatible for networking now
- No hardware modifications needed
- No special routines to learn

For Original, Upgraded, and New 512K Macs!

Call **1-800-531-5002**.

In Texas call 512-441-7890.

We welcome dealer inquiries.



Micro-Design

6301 Manchaca
Austin, TX 78745

*Macintosh is a trademark and Apple is a
registered trademark of Apple Computer.*

Circle 24 on reader service card

have since purchased the first few issues at my local Apple dealer and have placed a subscription.

I had judged your magazine on the basis of other computer "rags," which supply much interesting trivia but little specific hands-on information. *Macworld*, on the other hand, is well conceived. I find it to be an excellent companion to the Mac documentation; in fact, I keep my issues of *Macworld* with my manuals for easy reference. I look forward to exploring the intricacies of the Mac together with your fine writers, and I am anxiously awaiting further inside looks at new developments and in-depth explorations of the software I already own.

Mitch Cooper
Topeka, Kansas

Letters should be mailed to Letters, Macworld, 555 De Haro St., San Francisco, CA 94107, or sent electronically to CompuServe, 74055,412 or Source STE908. □

NEW VERSION NOW AVAILABLE!

RGS SOFTMAKER II™
(2.0 version)

for your Macintosh Computer

Has full Macintosh features; written in Microsoft BASIC 2.0; complete with a FREE report program and a sort/merge program.

SOFTMAKER II (2.0 version) makes use of the Macintosh environment with pull-down menus, windows, mouse, etc. Your Macintosh Computer is ready and waiting for SOFTMAKER II which is especially designed and created by RGS for Macintosh.

Includes so many features, much faster access to records; up to 500 fields in each record, has RGS SuperScan to scan any field in data base; allows for up to 50 screens, includes complete and total Math Package; provides complete job control; has password and screen protection. Users can move data between your SOFTMAKER II program and other programs via the Macintosh Clipboard. For professional results and you don't have to be a professional; includes complete documentation; 160 page user manual. ALL COMPLETE with suggested retail of \$199.00.

ORDER TODAY from your computer retailer. If he cannot supply you, send us his name or order direct... \$199.00 prepaid. Sorry No C.O.D.'s. Illustrated literature and information are available without charge. WRITE... RIGHT NOW.

Have you seen the RGS WORDPRO WORD PROCESSOR... check with your dealer today

RGS RIO GRANDE SOFTWARE

1107 Upas, McAllen Texas 78501
512-631-1177

Circle 26 on reader service card



Microsoft and Microsoft BASIC are registered trademarks of Microsoft Corporation. SOFTMAKER II and RGS are trademarks of Rio Grande Software, Inc. Macintosh is a trademark licensed to Apple Computer, Inc.

HOW A MACINTOSH PREVENTED THE OBLITERATION OF THE HUMAN RACE.



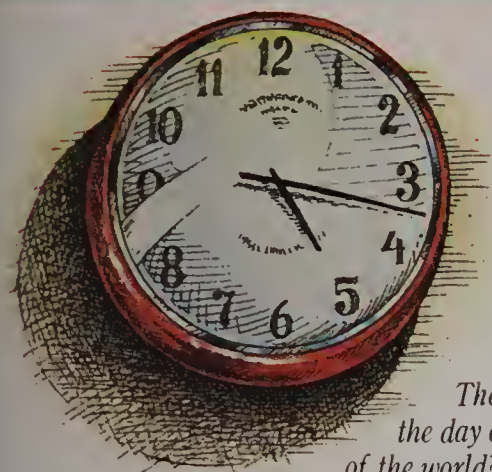
An Apple Macintosh™ can do quite a few amazing things. The latest of which is preventing global annihilation.

Consider Mr. Orson Aardvark. An ordinary business executive ready to pack up and head home after yet another difficult day. The time was 5:17 P.M. EST. Aardvark had no idea just how difficult his day was to become.

His desk had just become

*Saving the world is
all in a day's work for
one Orson Aardvark.*

**GROUND
ZERO**



*The end of
the day or the end
of the world?*

Aardvark watched as his country's entire defense system appeared on his Macintosh display screen. Nuclear attack warning lights were flashing like cameras at a Japanese photographers' convention. In Aardvark's hands were the defense weapons that could save his country, and the world, from becoming one extra large cheese pizza.

*Will it be for here
or to go?*



Aardvark grabbed the mouse. He paused. He thought. If the country were to be destroyed, there would be no 1040 forms to fill out. No lawn to mow. No weekend trips to see his mother-in-law.



Accelerated Depreciation.

But while some people believed the world could survive a nuclear holocaust, Aardvark knew better. He had seen "Planet of the Apes."



*The next
President?*

It was his duty to do everything in his power to save the country. Aardvark readied the laser defenses. But which city should he protect first? San Francisco? New York? Washington, D.C.? No, not Washington, D.C. The Redskins had cost him a fortune in last year's Super Bowl.

*Will Washington be beaten
by the long bomb?*



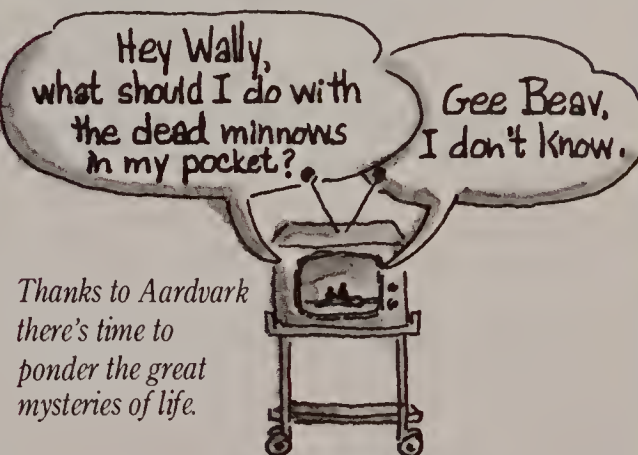
Missiles descended faster. Smart bombs began to fall. Enemy planes commenced their attack.

Aardvark began to fire. And fire. First Chicago was saved, then Boston. His quick hand and quicker eye were clearing the skies above his homeland. Every muscle, every nerve, focused on the screen before him.

He continued to fire.

Aardvark watched as the last enemy missile fell towards Bangor, Maine. Again he paused. Bangor was where his mother-in-law lived. With a sigh and a flick of his finger, the final missile was destroyed.

He sat tired. A good kind of tired. A drop of sweat rolled down his forehead and off his nose. He had once again made the world safe for democracy and "Leave it to Beaver" reruns.



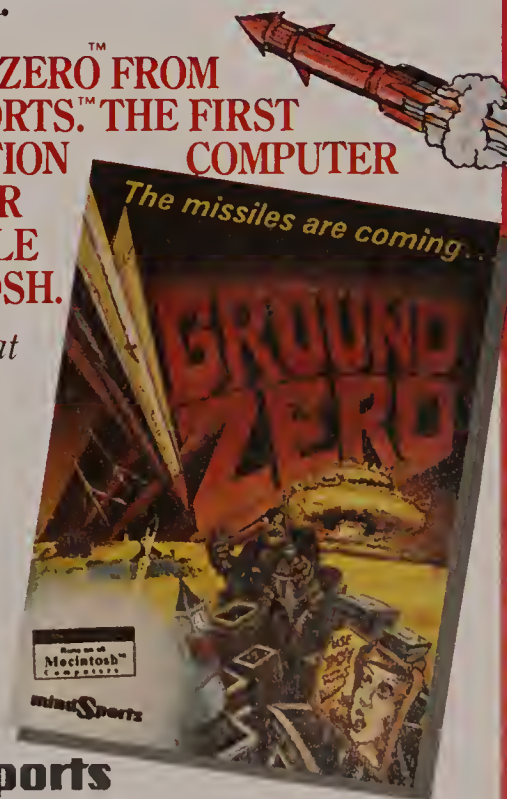
*Thanks to Aardvark
there's time to
ponder the great
mysteries of life.*

Aardvark rose from his chair. And as he stood staring at the Macintosh screen, a shiver went up his spine.

He felt another nuclear attack coming on.

**GROUND ZERO™ FROM
MINDSPORTS™. THE FIRST
FAST-ACTION COMPUTER
GAME FOR
THE APPLE
MACINTOSH.**

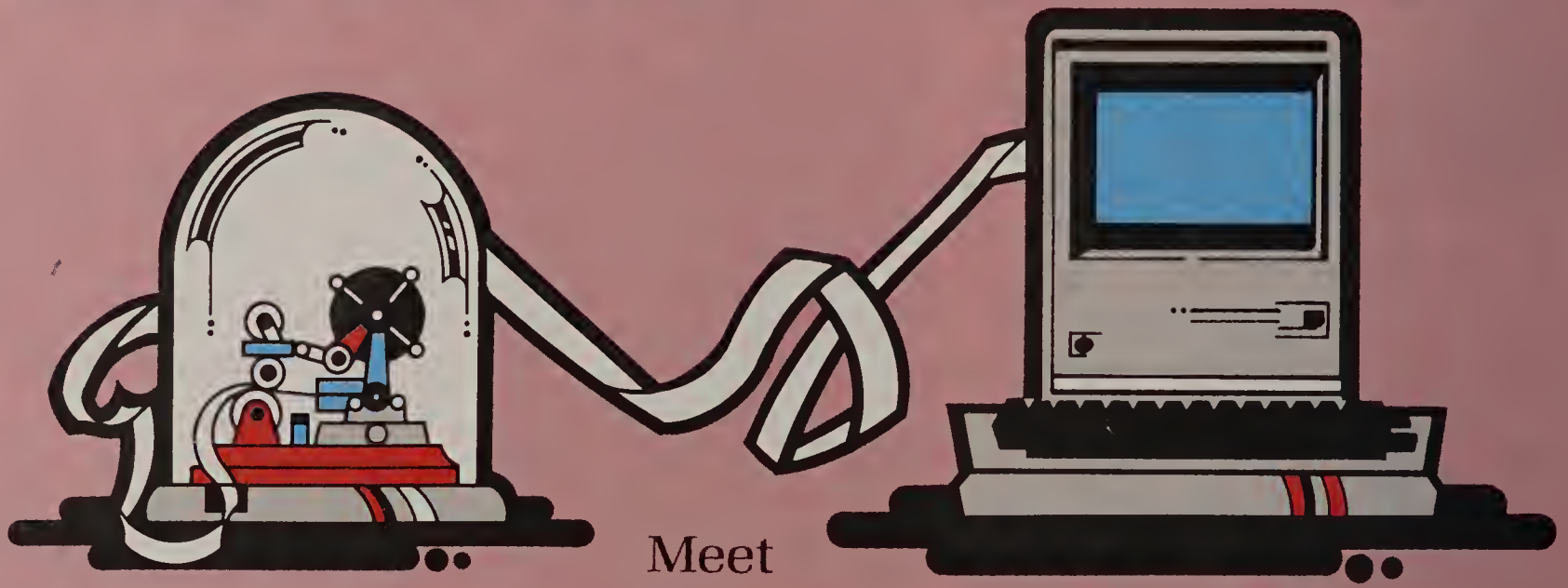
*(And a great
gift idea.)*



mindSports

Copyright © 1984 General Computer Company, 215 First St., Cambridge, MA 02142. GROUND ZERO™ and MINDSPORTS™ are trademarks of General Computer Company. Macintosh is a trademark of Apple Computer, Inc.

INVEST IN YOUR PERSONAL SUCCESS



Meet The Investor

First in a Series of Programs for Professional People
Now available from P³ INC.

SOPHISTICATED

The Investor is a sophisticated system of portfolio management, created exclusively by P³ INC. Capitalizing upon the incredible powers of your Macintosh, The Investor gives you control over your investment portfolio.

VERSATILE

Attain maximum performance with minimum effort. The Investor is easy to use, flexible and fast. A valuable financial aid for decision-making and tax preparation, it produces reports such as Portfolio Status, Capital Gains/Losses, Interest Income and Dividend Income.

Security quotes are updated automatically, via Dow Jones News/Retrieval Service. Graphics will chart your portfolio performance.

Single Security Report					
ACTIVE					
*Shares	Purch Date	\$/Share	Commission	Total Price	Market
100	01-23-84	26.785	234.75	2913.25	30
150	08-15-84	27.500	290.90	4415.90	45

SOLD			
*Shares	Purch Date	\$/Share	Sale Date
200	12-02-83	24.250	08-05-84
	Commission	340.34	Commission
	Total Price	5190.34	Total Proceeds
			Gain (Loss)

PROFITABLE

The financial advantages of The Investor far exceed its moderate price. With valuable information at your fingertips, you may find the services of a full-fledged broker unnecessary. See your dealer for a demonstration, or send for our \$15.00 Sample Demo Disk.

The Investor
\$150.⁰⁰

Programs for Professional People

P³ INC. is dedicated solely to producing superior Macintosh application software. No other computer compares to Macintosh, and no other software compares to P³ INC.

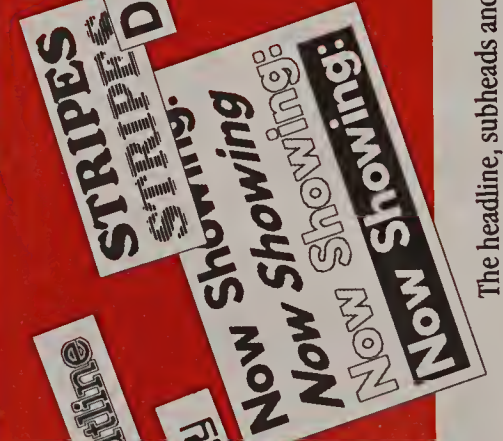
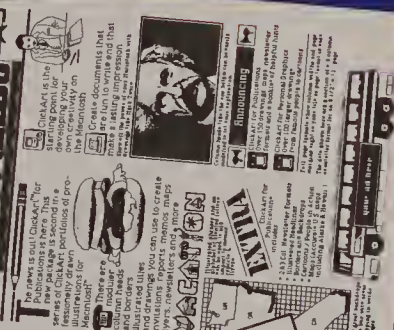
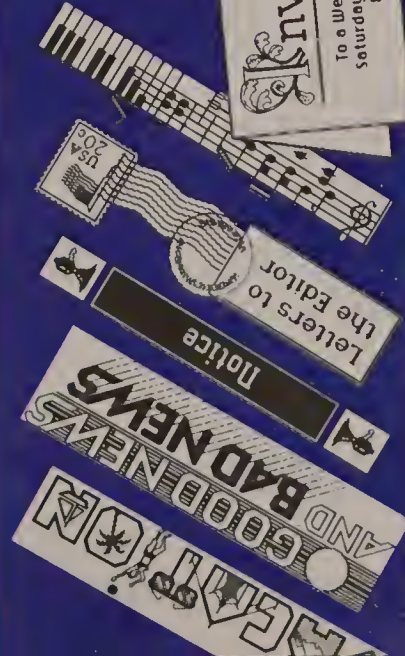
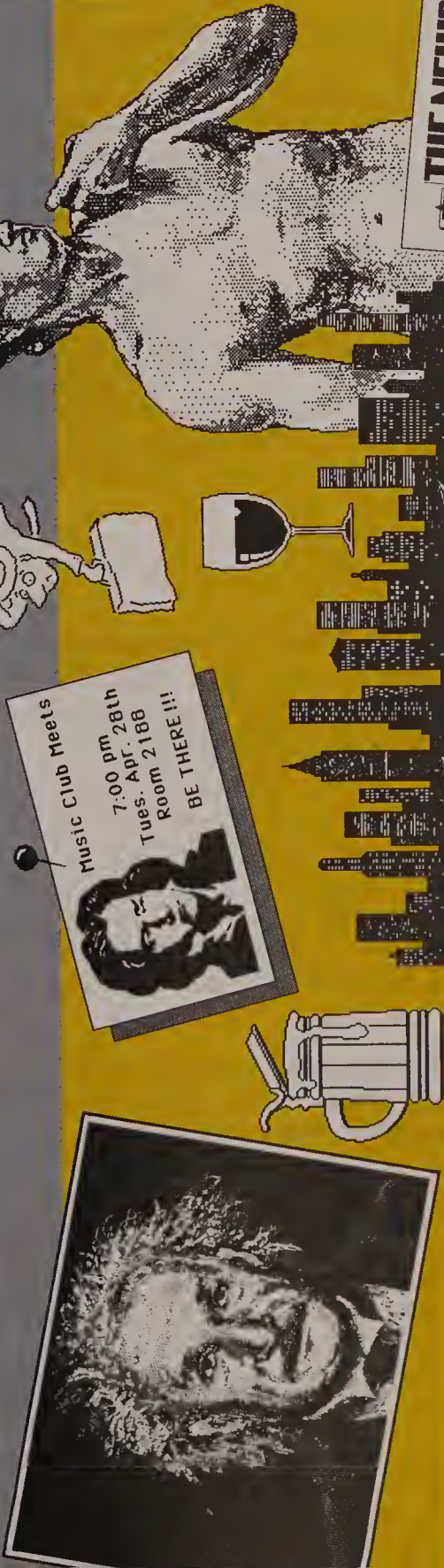
An entire series of easily learned, easily used programs will soon be available for a variety of professions. The Realtor,



The Engineer, The Professor and others are coming soon to your local software dealer. Watch for a program perfectly suited to your professional needs. Ask your dealer for The Investor, or

ORDER TOLL-FREE (800) 682-2900.
MasterCard & VISA welcome.

The ClickArt™ Collection



The headline, subheads and all illustrations were created using ClickArt and MacPaint™. ClickArt, Personal Graphics, Publications & Letters for Macintosh with MacPaint™ and MacWrite™. \$49.95 each. See your local dealer for details or call: T/Maker Graphics, 2115 Landings Drive, Mountain View, CA 94043 415/962-0195.

Circle 29 on reader service card

ClickArt is a trademark of T/Maker Company. Macintosh is a trademark licensed to Apple Computer, Inc. MacPaint and MacWrite are trademarks of Apple Computer, Inc.

The ClickArt™ Collection

The ClickArt™ Collection is a series of graphic image portfolios for your Macintosh™, professional quality art, graphics and lettering to make your personal, school or business communications come alive.

ClickArt™ Personal Graphics

is a contemporary collection of portraits, people, cars, cartoons, animals, billboards, over 150 quality drawings created by professional artists to help you enhance your written communication.

ClickArt™ Publications

gives you 2- and 3-column headings, illustrated phrases, borders, people, maps, & dingbats; everything you need to create memorable memos, announcements, reports, and newsletters.

ClickArt™ Letters

is a lettering system consisting of large, installable fonts and display alphabets for use in creating large, crisp lettering to add emphasis and that element of professionalism to your newsletters, reports, flyers, announcements and memos.

Each ClickArt product comes with our handy 32-page Reference & Tips Manual to help get the most out of your Macintosh and ClickArt.

Together the ClickArt Collection becomes a complete art department ready to help you invite, announce, advertise and report with impact. With the ClickArt Collection you more than communicate, you make a lasting impression.



Presenting . . .
the complete presentation maker . . .

The Slide Show Magician™

**Lets you make Macintosh* slide shows
with movie-type special effects!**

Now, for business meetings . . . sales presentations . . . in-store and store window demonstrations . . . for classroom use . . . for home fun!

Anything you can put on a Mac screen can be used with the Slide Show Magician . . . from Multiplan® spreadsheets and MacWrite** copy to pictures, graphs, words and charts. You can control every frame with your Mouse or let the entire show run automatically, even run continuously as an unattended display!

There are 16 dramatic, movie-type special effects you can use to create extra attention.

And, right on the screen you can place the specific control buttons you want to click: start, next frame, back-up, jump (to a specific frame), pause/resume, quit.

Want Subliminal Messages in your show? The Slide Show Magician lets you put them in, as well as superimpose blocks of text over key pictures.

Naturally, you can edit your show — shift a frame, eliminate a frame, add or delete special effects, select the time before a frame change. And you can use the supplied screen-borders (like a stage curtain which opens) or quickly prepare your own.

Now you can create the most interesting slide shows **this side of Hollywood!**

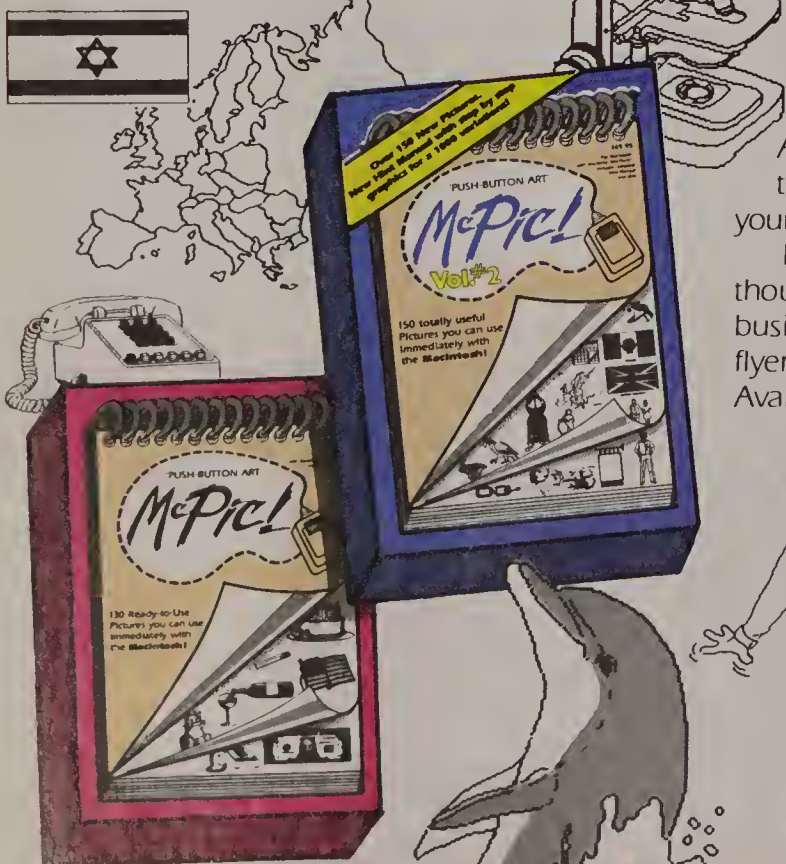
And thanks to the Mac's portability you can take it with you right to a customer's desk, the boss' office, to school, to meetings. Or, set it on a counter or in your store window and let the show run and run and run.

Get the Slide Show Magician today, it's good business. Need art help to make an impressive slide show? See the McPic! information that follows.

Only \$59.95

For details,
see below.

McPic!™ Volumes 1 & 2

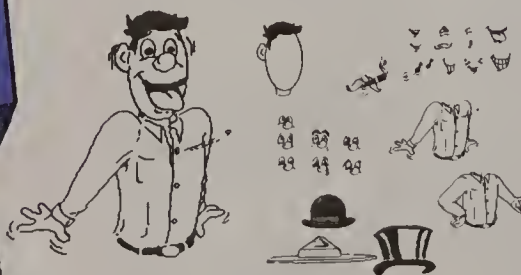


Here's push-button art for the Mac! A combined total of over 300 useful, usable pictures you can use "As Is". Or, with MacPaint/MacWrite you can customize, clone, combine or change them to suit your needs!

Vol. 1 has its library of pictures in 12 individual Scrapbooks from Business to Holiday to Animals to Symbols. Vol. 2's unduplicated pictures are in MacPaint** files, and cover everything from Science, Exotica, Maps and Flags to the People Maker which lets you make your own people from dozens of heads, eyes, mouths, hats, torsos, accessories etc!

Each volume has a different Hint Manual which graphically shows you how to make a thousand picture variations! No competitive program is so complete, so useful, so usable! For business, for school, for home, for anyone who needs or wants to create invitations, cards, flyers, stationery, ads, reports.

Available now at your computer store.



Vol. 1 **McPic!** with 28 page Hint Manual. \$49.95

Vol. 2 **McPic!** with 36 page Hint Manual. \$49.95

The Slide Show Magician. \$59.95

VISA/MASTERCARD accepted. Add \$2.00 shipping/handling for 1 program. \$3 for 2 programs. \$4 for all 3. (Cal. residents please add 6 1/2% tax.)

© Registered trademark of Microsoft Corp.

*Trademark licensed to Apple Computer Inc.

**Trademarks of Apple Computer Inc.



Magnum
SOFTWARE

21115 Devonshire St., Ste. 337 • Chatsworth, Ca. 91311 • (818) 700-0510

Circle 51 on reader service card

NOVATION

THE CAT[®]
DESIGNED FOR
MACINTOSH.™



**\$499 Cat
for your mouse.**

Our engineers have designed the most advanced personal computer modem your money can buy. And then we've added the right software to make it absolutely simple for you to communicate with your Macintosh or Lisa.

The modem is our new Hayes-language LSI 300/1200 Smart-Cat PLUS™. It's better right from the first step with faster more accurate dialing. An automatic self-test checks out the entire communications loop including the modem on the other end. You get the last word in LSI circuitry. And more.

The software is MITE™. It's menu-driven, telling you exactly what to do at each step.

No mysteries. It checks itself out to make sure what you send is exactly what is received at the other end. And you can have easy, instant access to Dow Jones, CompuServe and the like.

The price is right, too. At \$499, it's a lot less than you might expect.

Your computer dealer has the new Cat system now. Ask for a hands-on demonstration and discover how nice *simple* really is.

Novation, Inc., Box 2875
20409 Prairie Street, Chatsworth,
CA 91311 (800) 423-5419.

In California: (818) 996-5060



NOVATION

Macworld View

News and notes for the Macintosh community

Edited by Janet McCandless

Macworld View reports on new products and developments in Macintosh technology. We cover items of interest to Mac users and comment on industry trends. We welcome contributions from readers and pay up to \$50 for the items we use. Please include your name, address, and phone number with your contributions; send them to Macworld View, 555 De Haro St., San Francisco, CA 94107.

The Mac Coaches Batters

Can playing video games improve a baseball player's batting average? Yes, says Peter Favaro, a personal computer consultant with a doctorate in psychology.

When video games first appeared, many sports trainers wondered if they could be used to improve athletes' eye-hand coordination. Favaro, however, believes that such software is best applied to sharpening athletes' decision-making processes, rather than to developing their eye-hand coordination per se.

For example, take a baseball player who is in a slump. Normally, coaches work on improving such a player's batting techniques. But Favaro believes that slumps result from slowed-down processing of the visual information the athlete receives while playing.

The batter must, for instance, recognize at exactly what point a ball breaks. When the ball is first thrown by the pitcher, it appears to travel in a straight line. If it is a fast ball, it continues traveling along the same path. But if it is a curve ball, it breaks at some point. Exactly when does the visual information change?

To sharpen this one aspect of athletic decision making, Favaro has designed a video game for the Macintosh. The player is shown an image of a coin flipping at high speed. He or she must click the mouse each time the image changes.

Favaro believes that practicing this discrimination task helps train baseball players to judge the pitcher's throw and decide when to hit the ball.

Favaro selected the Mac for developing sports software because of its fast 68000 processor and its black-and-white high-resolution monitor, which athletes find "less distracting" than a color monitor. He plans to publish a book, accompanied by software, on personal computer applications in sports, physical fitness, and stress management.

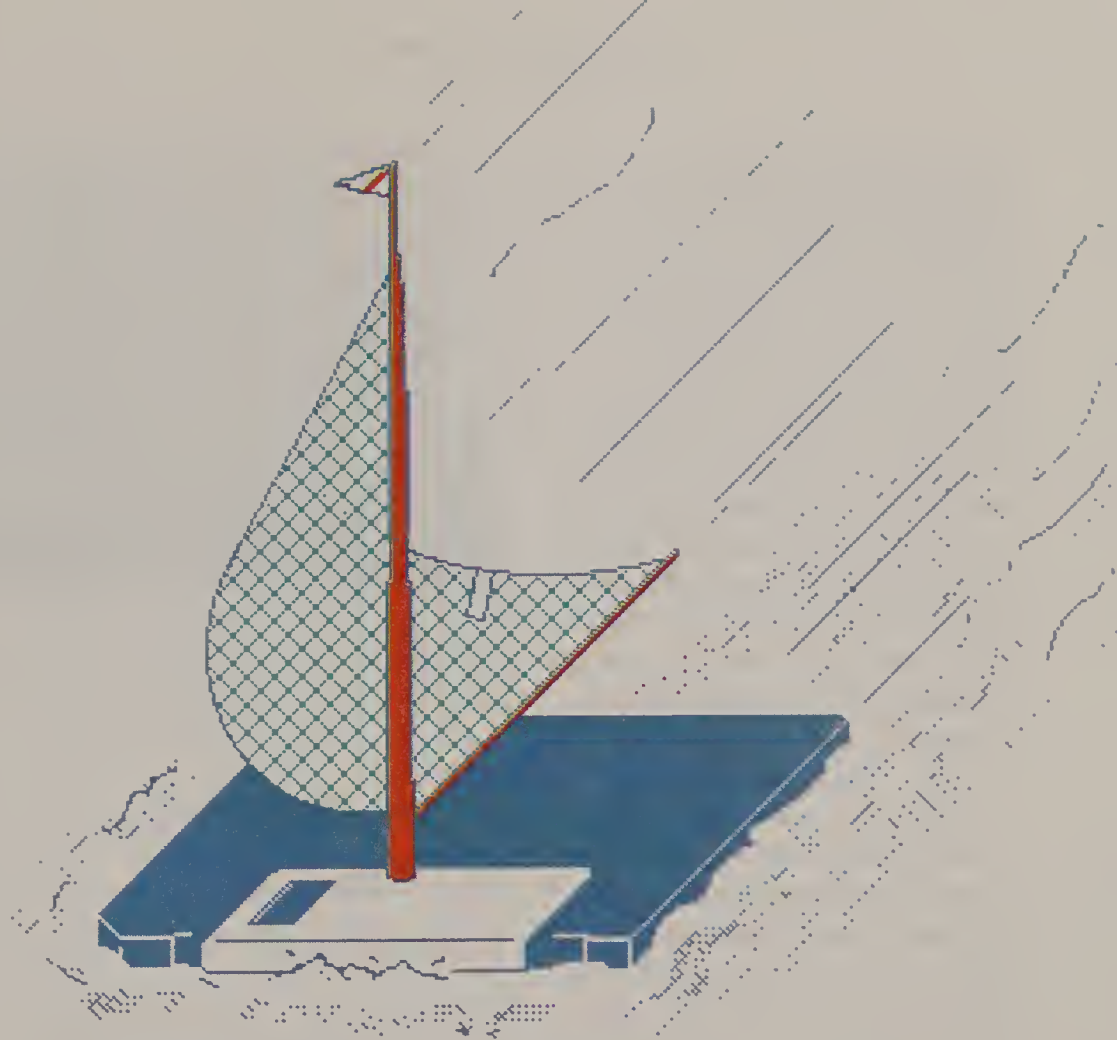
512K Update

The official announcement of the 512K Macintosh on September 10 creates new purchasing decisions for both potential owners and owners who bought their machines before the announcement date. The suggested retail price for the 512K Mac is \$3195, and the price of the 128K version has been reduced \$300 (from \$2495 to \$2195). If you look through your local newspaper, you may see the 128K Macintosh advertised for less than \$2195. And some retailers are even selling it for less than \$2000.

Mac owners who want to upgrade their 128K machines to 512K must purchase the Macintosh 512K Memory Expansion Kit from a dealer for \$995. Your dealer performs the upgrade by installing a new digital board; the procedure takes less than half an hour. If you bought your Mac before September 10 and can't decide if you want to upgrade, you may be interested in Apple's incentive plan. As of this writing, Apple plans to have your dealer give you a special coupon when you upgrade your machine. If you send Apple the coupon, your system disk, and proof of the date you purchased your 128K Mac, you will receive free copies of *MacDraw* and *MacProject*. Coupons will be packaged with the Memory Expansion Kit

until March 31, 1985 and can be redeemed until June 1.

The 512K Mac performs better than the 128K Mac in several respects. You can copy disks and documents faster, store larger documents, and use enhanced application programs designed to take advantage of the extra 384K of memory. But the real power of the 512K Mac shows up when a portion of memory is configured as a RAM disk. A RAM disk (sometimes called an electronic disk) uses the computer's memory to hold programs and data. If you load an application and all the information it needs to run into a RAM disk, for example, the delays that occur as the Mac transfers information into memory from disk or vice versa are virtually eliminated. Assimilation Process of Cupertino, California, plans to release RAM disk software for the 512K Mac. See your Apple dealer for availability information.



Microsoft Overseas

If you're a businessperson revising a *Microsoft Multiplan* spreadsheet for a report on your board of directors' meeting in Copenhagen, you may not realize that your colleague in a Paris branch office could be preparing a similar report using a French version of *Multiplan*.

Yes, foreign-language software for the Mac is available, and will become increasingly common during the next few months. Since the European software market is growing rapidly, companies such as Microsoft (which has subsidiaries in England, France, and Germany) are planning to translate Macintosh software and distribute it overseas. In fact, Microsoft plans to release French and Italian versions of *Multiplan* before the end of 1984. A German version is scheduled for release in late 1984 or the

first quarter of 1985, as is a French version of *Microsoft Chart*. Future plans for European Macintosh owners include foreign-language releases of *Microsoft Word*, *Microsoft File*, and MBASIC 2.0.

Programmers Supporting Each Other

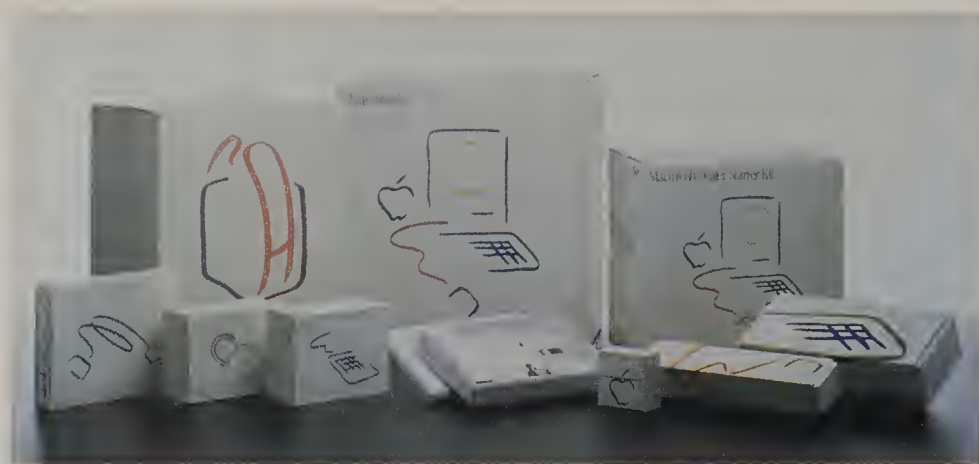
Independent software developers are finding that some of their best friends are direct competitors. At least, that's what's happening at the Software Entrepreneur's Forum and the Programmer's Shop.

Programmers for the Macintosh meet regularly at the Software Entrepreneur's Forum (in Palo Alto, California) to swap information and to share expertise. Every two weeks, speakers give talks on particular topics and members engage in informal discussions. And once a week, smaller groups of four to seven programmers gather to discuss the Macintosh documentation or to work on a se-

lected topic, such as how to implement desk accessories. William Parkhurst, vice-president of the Forum, says that programmers willingly share utility programs and sub-routines. He feels that many small developers recognize that they can bring their products to market faster by exchanging information than by working alone. In addition to developers, the Software Entrepreneur's Forum welcomes marketing personnel, venture capitalists, and publishers.

The Forum also sponsors a bulletin board where members can exchange technical and product information. A similar bulletin board is maintained by the Programmer's Shop in Hanover, Massachusetts, a nationwide retailer specializing in products for programmers. Certified and noncertified developers use the board to exchange information about products they have developed, heard about, or tried. These products include compilers, languages, utilities, and development tools (such as assemblers, debuggers, and libraries). The Programmer's Shop also attempts to verify product and release date information for its clients, and advises them on market trends.

For more information on the Software Entrepreneur's Forum, write to Barbara Cass, Executive Director, Software Entrepreneur's Forum, P.O. Box 61031, Palo Alto, CA 94306, 415/854-7219. For information on the Programmer's Shop, write to Programmer's Shop, 128 Rockland St., Hanover, MA 02339, 800/421-8006 or 617/826-7531.



The simple, fluid designs decorating the boxes for the Macintosh and its accessories resemble Matisse's work. The motifs of most of the components are cleverly replicated from the drawing of the Mac.

An Award-winning Package

Since its introduction in January, the Macintosh's packaging designs have received wide recognition. The American Institute of Graphic Arts cited the Mac team for packaging designs in its communications graphics competition. The Industrial Designers Society of America presented Apple with a certificate of excellence in which jurors remarked that "the Macintosh packaging presents a delightful departure from the standard computer packaging with its technical appearance and state-of-the-art imagery. . . . But not only are the graphics engaging, they are also daringly different. All in all, a brilliant, human design breakthrough." The packaging designs were among 100 accepted by the Society of Typographers of America for its annual show. The Mac team achieved recognition in separate annual competitions sponsored by *Art Direction* and *Print* magazines.

Inspired by a poster by John Casado, Tom Hughes invented a design for the Mac logo using primary colors that have line quality resembling the work of the French artist Matisse.

Hughes retained Casado to create the actual illustration, relying on his experience in minimalist designs, in which each line is significant. According to Hughes, Steve Jobs was involved in fine-tuning the logo. Clement Mok worked with Hughes on the designs for the boxes that contained the numeric keypad, the disk drive, and the carrying case. Mok was also the art director for the *MacPaint* manual. Ellen Romano developed the overall design for the manuals and managed their production.

Apple in Community Affairs

Beginning in 1985, Apple will offer Macintoshes as part of its Community Affairs Grants program to nonprofit organizations. Mark Vermilion, Apple's manager of community affairs, says that the grants are awarded primarily to organizations that use personal networks "for direct human services and humanistic kinds of activities." For example, Chorizo, a San Francisco-based organization, received a grant to develop a shared data base for five neigh-

borhood agencies to retrieve information on legal aid, health services, education, and housing. A group of artists from Davis, California, that travels and puts on shows for the public obtained an Apple II for choreography and music synthesis.

Apple's Grants office receives 1000 to 2500 inquiries a month. Although Vermilion understands that nonprofit organizations are administered by overworked employees, he cautions administrators to take the time to plan a computer application thoroughly and to discuss how the technology will be introduced within their organization. He recommends that organizations research other nonprofits that already use computers in their work. One agency that nonprofit associations can contact for information is the Public Interest Computer Association in Washington, D. C. Write to PICA, 122 Maryland Ave. NE, Washington, DC 20002, 202/544-4171.

As a way of addressing the needs of a large number of nonprofit groups in metropolitan areas, Apple has initiated a computer lab project. Vermilion says that Apple intends to establish eight to ten computer labs this year. The first lab has been set up at the Information Technology Resource Center, affiliated with the Museum of Science and Industry in Chicago. The lab is equipped with Apple IIe's and Macintoshes, and its purpose is to inform nonprofit organizations about the uses of computers in their work. The lab staff assists administrators in identifying their organization's computer needs and in selecting appropriate applications.

Groups are given access time on computers. The computer lab program is a coordinated effort by Apple, other vendors, local funding sources, and service organizations that provide technical assistance to non-profit groups.

For further information on the Community Affairs Grant program, write to Apple Computer, Apple Community Affairs, 20525 Mariani Ave., M/S 23L, Cupertino, CA 95014.

The Look-alike Story

Several new programs reveal that the Macintosh user interface and bit-mapped graphics are influencing the design of software for other personal computers. One of the most influential programs is Bill Atkinson's *MacPaint*. Jeffrey Young, a Contributing Editor of *Macworld*, has followed the *MacPaint* phenomenon since the Mac was introduced in January 1984. He recently examined three graphics programs that offer interesting comparisons with *MacPaint*.

Young reports that *ColorPaint*, released by IBM for the PCjr, is *MacPaint*'s closest look-alike. You choose items from pull-down menus and draw with a mouse. *ColorPaint*'s menu is similar to *MacPaint*'s, with the addition of a merge feature for combining two drawings. Fewer shaped tools are provided in *ColorPaint*'s tool shelf, but a microscope tool enables you to edit your drawings pixel by pixel. A tool's most recent action can be reversed with a second button on the mouse.

ColorPaint does not allow you to integrate text and pictures, and it provides fewer fonts and font sizes than does *MacPaint*. Eight separate 16-color palettes are provided, giving you 128 colors in all. However, you can use only four colors on the screen at once, and the intensity of the colors changes each time you select a new color palette. *ColorPaint* allows you to print in color.

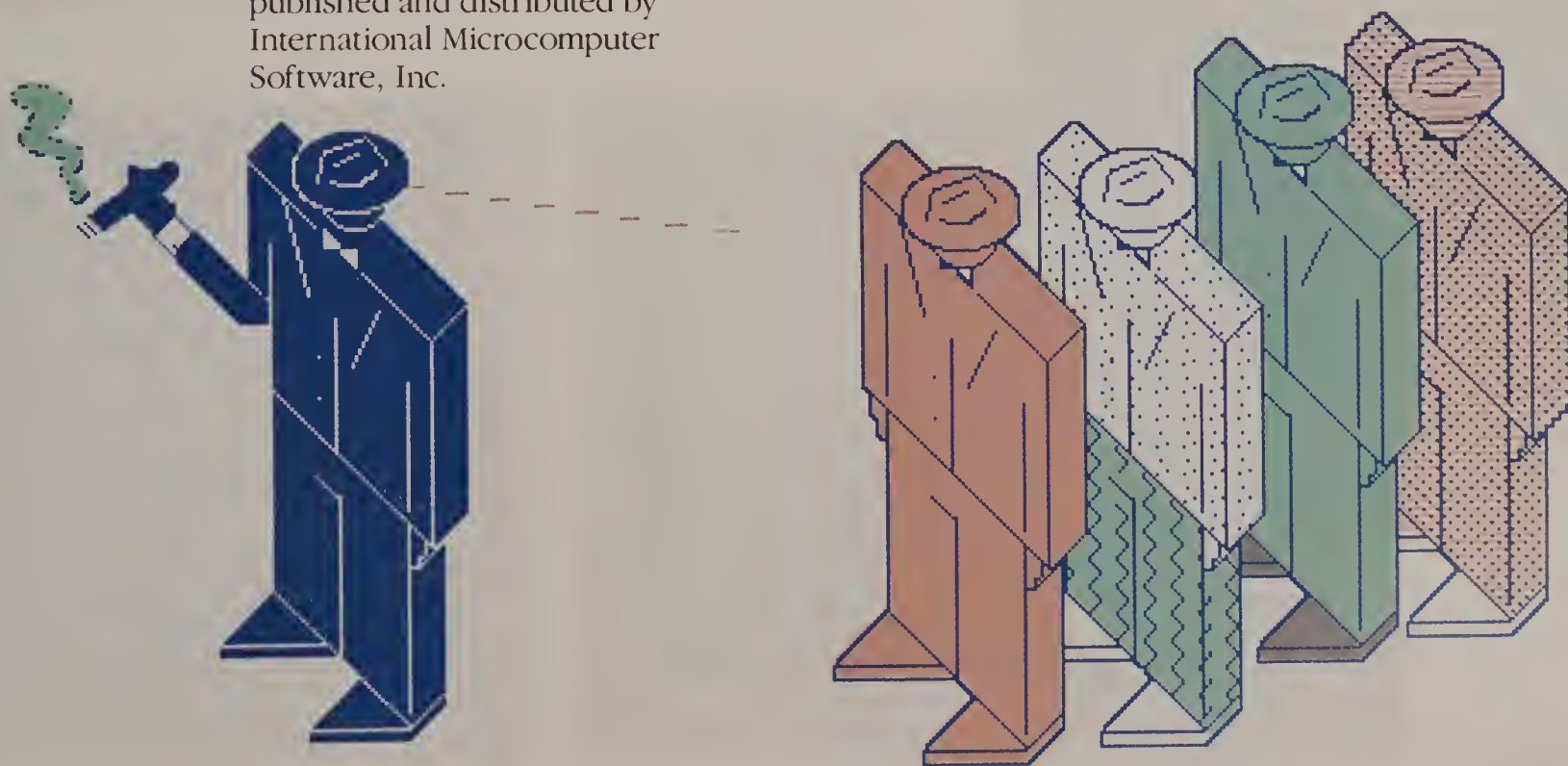
Young notes that *PC Paintbrush* (received too late for review) is also similar to *MacPaint*. It runs on the IBM PC, PCjr, and PC compatibles, and is published and distributed by International Microcomputer Software, Inc.

Two other programs related to *MacPaint*—*MousePaint* and *DazzleDraw*—work with the Apple IIe and Apple IIc. *MousePaint* (also called *ApplePaint*) was created by Bill Budge, author of the *Pinball Construction Set* game, and is marketed by Apple. *MousePaint* does not allow you to use patterns, only solid colors. The program offers 128 colors, but you can use only one at a time on the screen. However, you can print in more than one color with the Apple Scribe printer.

The second *MacPaint* look-alike for the Apple IIe and Apple IIc is *DazzleDraw*, marketed by Broderbund Software. *DazzleDraw* provides 128 different colors that can be combined and saved on disk. An exchange feature allows you to fill portions of your drawing more flexibly than with the *MacPaint* paint bucket; you can exchange patterns and colors in specific areas. *DazzleDraw*'s tools are not visible on a tool shelf; they must be chosen from a pull-down menu. You can enter text

with *DazzleDraw*, but its text capabilities, like *ColorPaint*'s, are more limited than those of *MacPaint*. *DazzleDraw* allows you to print in color.

According to Young, the computers running these *MacPaint* look-alikes have lower-resolution graphics than the Macintosh. Consequently, you cannot achieve such finely detailed drawings. Also, none of the programs offer the flexibility of the lasso in selecting areas to be cut or copied. They rely instead on equivalents of the clumsier selection rectangle. And although you can print drawings created with any of these three programs in color, to do so you must invest in a thermal or ink jet color printer. □



Introducing Filevision™ for Macintosh.™

The fine art of filing by pictures.

Now you can file things the way you see them.

Because Filevision lets you store any kind of information visually. Within pictures you easily create yourself. Even if you can't type or draw.

Filevision. The first software that combines a practical filing system with a simple-to-use, object-oriented drawing system. Which lets you quickly visualize your data. Instead of sorting through tedious line-by-line listings.

In the click of a mouse, you can retrieve the data stored behind each object in your picture. You can even select the objects in your pictures, based on the

data in your files.

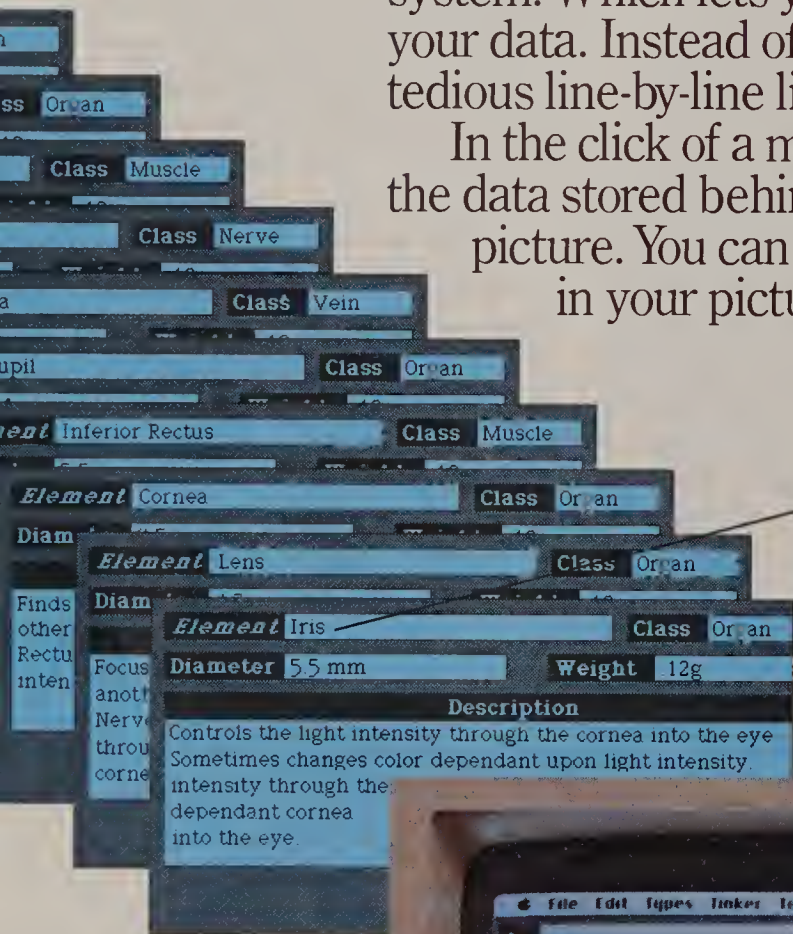
What's more, Filevision lets you link another picture to an object. And lets you group objects together as a common type. So you can create zoom-like effects, step-by-step hierarchies, or overlays. Whatever your mind can picture.

"Finally. A filing system that sees things my way."

Imagine. A filing system for less than \$200, that lets you look at information the way you look at the world around you.

Utilizing the simplicity of the Macintosh's eye-opening technology, Filevision allows you to create the most spectacular visualizations of whatever you need to file. Or anything you want to see in more detail.

Whether you're an entrepreneur, a businessperson, or someone who collects things at home; if your data relates to



Each object in your picture is automatically connected to the information about that object.



Create technical illustrations or pictures of science class projects, with ease. Whatever you need to remember about your picture, Filevision lets you store on forms connected to it. And retrieve in the click of a mouse.



Organize office space by department. Diagram a summer home. Even create a play book for your football team. It's a breeze with Filevision.

something you can see, you can file it visually with Filevision. And retrieve it visually, too.

You simply place objects in a picture, or select symbols from Filevision's ready-made symbol menu to represent pieces of the information you wish to file.

Then there's Filevision's flexible way of handling alphanumeric data. Each object in your picture is automatically connected to a data form. Which you custom design, quick as a click.

"For a change, it's simple to modify my files."

Updating your files is just as easy. Whenever the best-laid plans of mouse and man need a little replanning, remember you're just a click or two away from reperfecting your files. Create new symbols and objects, and add them to your picture.



Make a data form for any new object, and all objects of that type will have the same form. Automatically.

Modify a symbol and all matching symbols in your picture will be modified. Automatically.

Change an existing form, and all forms of that type will change. Automatically.

"Picture the potential."

The possibilities are endless.

Filevision can help you quickly make maps, and dawdle over the demographics. Assemble anatomical drawings and look up the names of the ligaments. Separate a plan of Bar Mitzvah guests into those who do and those who don't eat Kosher food and actually see who you seat them next to. Pinpoint places and connect them to faces. Control your inventory by depicting your entire shelf space. And map out geography lessons, sales territories and direct-mail ad targets ad infinitum.

Filevision. The unique filing system for your Macintosh that lets you store and work with information in pictures, as well as numbers and text.

TELOS™
SOFTWARE PRODUCTS
Software for the real world.



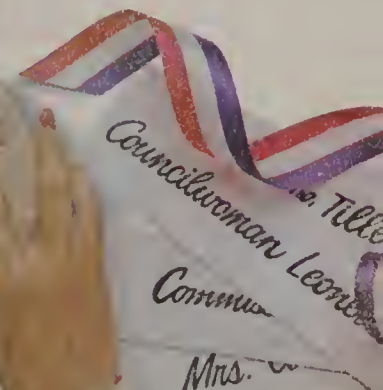
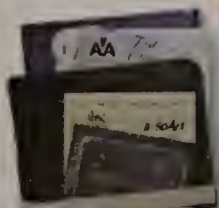
Map out sales territories. Sift out subdivisions for direct-mailings. Or search out the states that participated in the French and Indian Wars. Filevision makes your requests pop off the screen. In the click of a mouse.



Plan a political fund-raiser with Filevision, and seat the non-smoking Independents away from the smoking Republicans. Or, click to see which blocks of seats have been reserved at your dinner theater.

Filevision is a trademark of Telos Software Products.
Telos is a trademark of Telos Corporation.
Macintosh is a trademark licensed to Apple Computer Inc.

Circle 54 on reader service card



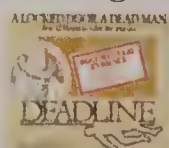
OUR STORIES LACK IMAGINATION.



Because Infocom's interactive fiction is designed to run on *your* imagination.

That's precisely why there's nothing more interesting, challenging or interactive than an Infocom disk—but only after you've put it in your computer.

Once it's in, you experience something akin to waking up inside a novel. You find yourself at the center of an exciting plot that continually challenges you with surprising twists,



unique characters (many of whom possess extraor-

dinarily developed personalities) and original, logical, often hilarious puzzles. Communication is carried on in the same way as it is in a novel—in prose. And interaction is easy—you type in full English sentences.

But there is this key difference between our tales and conventional novels: Infocom's interactive fiction is active, never passive. The course of events is shaped by what you choose to do. And you enjoy enormous freedom in your choice of actions—you have hundreds, even thousands of alternatives at every step. In fact, an Infocom



interactive story is roughly the length of a short novel in content, but because you're actively engaged in the plot, your adventure can last for weeks and months.

Find out what it's like to get inside a story. Get one from Infocom. Because with Infocom's interactive fiction, there's room for you on every disk.



INFOCOM™

For your: Apple II, Macintosh, Atari, Commodore 64, CP/M 8*, DECmate, DEC Rainbow, DEC RT-11, HP 150 & 110, IBM PC* & PCjr*, KAYPRO II, MS-DOS 2.0*, NEC APC, NEC PC-8000, Osborne, TI Professional, TI 99/4A, Tandy 2000, TRS-80 Color Computer, TRS-80 Models I & III.

*Use the IBM PC version for your Compaq and the MS-DOS 2.0 version for your Wang, Mindset, Data General System 10, GRiD and many others.

Circle 43 on reader service card

LETTER QUALITY PRINTING FOR YOUR MACINTOSH™ with

ProPrint™

Now Supports . . .
Multiplan, Think Tank
and others

Now Features . . .
Proportional Spacing
Headers / Footers
Decimal Tabs



CDI's **ProPrint** is the **MOST COMPREHENSIVE** letter quality program for the MAC on the market today! You can prepare professional letters, reports and documents from your MacWrite™ files on all popular letter quality (serial) printers:

Abati
Amdek
Apple
Blue Chip

Brother
C. Itoh
Comrex
Daisywriter

Diablo
Dynax
Juki
NEC

Qume
Silver-Reed
Star Powertype
Smith Corona

TeleVideo
Transtar
Xerox
H.P. LaserJet

ProPrint is

—Versatile, formatting includes

- Proportional Spacing
- Underlining
- Bold face
- Superscript
- Justification: Right, Left, Center, Full
- Headers/Footers
- Subscript
- Ribbon color change
- Tabs; Decimal tabs

—Multi-Tasking

- Allows user to simultaneously
 - 1) Print document(s)
 - 2) Use desk accessories
 - 3) Select additional files for printing
 - 4) Monitor and control printing status

—Easy to use, yet POWERFUL:

- Mouse driven, uses pull down menus
- Auto loads and prints up to 50 files
- Single or multiple copies
- Auto default to most recent printer settings upon start up (no need to reload printer specs before each use)

—Fully warranted for one year

—Available for immediate delivery

ProPrint	\$ 74⁰⁰
ProPrint with cable.....	\$ 99⁰⁰
ProPrint with A/B Switch and 2 cables	\$225⁰⁰



Creighton Development, Inc. 4931 Birch Street, Newport Beach, CA 92660
(714) 476-1973

TM—Macintosh is a trademark licensed to Apple Computer, Inc., ProPrint is a trademark of Creighton Development, Inc., MacWrite is a trademark of Apple Computer, Inc.

Circle 64 on reader service card

Now under new

Now that MacWrite and MacPaint have dragged you **not** kicking and screaming into the world of personal computing, it's time to give your Macintosh new marching orders:

The OverVUE™ information manager.

With OverVUE, you can now enter another world just as easily. The world of database management.

A database, in case you didn't know, is

simply raw information. Like a long-distance phone bill, a mailing list, an inventory, or your daughter's orthodontist appointments. And what OverVUE does is organize all that into useful tables, summaries, extracts, analyses, or reports.

This is serious business. But you can do it easily. Because OverVUE takes full advantage of Apple's incredible Macintosh technology.



management.

Communicates with other software like Microsoft Chart and Multiplan. Allows editing just like MacWrite. Does math just like Einstein.

And the process doesn't drag on forever. OverVUE can sort 1,000 records in about 2 seconds.

So if you've got sales to analyze, inventory levels to track, customer lists to update, phone charges to allocate, time reporting to simplify,

projects to schedule, bank statements to reconcile, employee records to maintain, accounts receivable to monitor, or a power lust to satisfy, rush over to your authorized Apple dealer.

Don't go another day without OverVUE.

The quick, the easy, the only way to get you and your Macintosh into upper levels of management. **OverVUE™**

ProVUE Development Corporation, 222 22nd Street,
Huntington Beach, CA 92648 • (714) 969-2431



Have You Hugged Your Mac Today?

Gordon McComb

The Macintosh is a fairly self-sufficient machine. It does what you ask it to do without demanding too much attention, but carrying out your commands does cause wear and tear. Following some simple, inexpensive cleaning routines can help you save money on service calls.

Just about any dentist will tell you that the best way to keep a happy smile is to take care of your teeth. Brush regularly, dentists say, and avoid between-meal sugary snacks, and you'll greatly reduce the chances of getting nasty holes in your teeth. Unlike old-time dentists, modern dentists urge preventive maintenance. They leave pulling teeth till last. The more you take care of your teeth, the less drilling and filling you'll have to suffer.

What on earth do teeth and the Macintosh have in common? Just like your teeth, your Macintosh needs regular care if you expect it to have a long and hearty life. With the Mac, you're not up against cavities, but against dirt, grime, oil, and a host of other potentially disastrous villains. Keeping the Mac in top working condition can help you avoid costly service calls.

For a long-lasting Mac, it's a good idea to clean the slender plastic exterior, to vacuum or blow out accumulated dust from its ventilation slots, to keep the disk drive grime-free, and to maintain the mouse in top working condition. While there's nothing technical about caring for the Macintosh, and nothing outrageously expensive, there are right and wrong ways to do it.

A Home for Your Mac

The first step toward proper Mac care is placing the machine in the proper environment. A sturdy desk or table in a corner of a clean office, den, or classroom is ideal. The Macintosh should be kept out of direct sunlight. Not only can the sun's light cause annoying glare on the video screen, its heat can warp the Mac's plastic case. Worse still, sunlight can cause the internal circuits to overheat. Let one of the Mac's components get too hot and it'll burn out. Blow just one chip and you're looking at a \$50 repair bill; minimum.

The Macintosh was designed to use convection cooling. With this cooling technique, air is drawn through the Mac's side and bottom vents and out the top when the inside of the machine heats up. If you block any of these vents, you seriously restrict the airflow so that the Mac heats up.

□ □ □ □ □ □ □ □ □ □

Clean the Macintosh's exterior with a soft sable paintbrush, which you can buy at any art store.



For safety's sake, always keep the immediate area around the Macintosh free of objects, including paper, disk caddies, modems, and printers. In particular, keep the external drive away from the vents on the computer's left side. The left side gets the hottest because it's the side with the heat-generating analog board (which contains the Mac's power supply and all the electronics to operate the video display tube). The vents should get at least an inch of free space for breathing room.

■ ■ ■ ■ ■ *If you're a lousy housekeeper, it'll quickly show up in the way your Macintosh behaves.*

One of the latest furniture trends is all-in-one computer workstations with all kinds of nooks and crannies for a computer and its accessories. Specially built furniture is a nice idea, but it's wise to stay away from the desks where the computer is tucked inside an enclosure (they're easy to spot: they look like futuristic rolltop desks or fancy kitchen cabinets). Like errant papers or misplaced disk drives, enclosed computer workstations can restrict airflow through the Macintosh.

Power to the Mac

While thinking of a good place to rest your Mac, consider the location of the nearest power outlet. If at all possible, place the Mac right by an outlet and avoid the use of extension cords. If no convenient power outlet can be found, you'll have to make do with an extension cord. The Mac's power cable is only a little over 7 feet long, so in reality an outlet must be under your nose to do much good. There is actually nothing wrong with using an extension cord with the Mac, but you must follow some rules.

Don't settle for just any extension cord. Good ones for the Mac should be big and fat and rated for at least 20 amps. Most importantly, the cord must have a grounding plug. This plug is essential for safety.

Alas, the cheap extension cords commonly used for lamps just won't do for the Mac. They're too light and they lack a grounding wire. While you're at the hardware store buying the right kind of extension cord, get one that's just long enough for the job. Don't trail a 20-foot cord around the floor when a 6-foot cord will do.

Whether you use an extension cord or not, keep the wires out of the way. You run the risk of losing precious data if someone trips over the cord and the plug comes tearing out of the wall. Besides, tripping over the power cord will likely yank the Mac right off the table, and a cracked Mac is a sorry sight.

When at all possible, avoid plugging the Mac into the same electrical circuit shared by a heavy, power-hungry appliance such as a refrigerator, air conditioner, or photocopier. Heavy appliances like these draw lots of power when they are first turned on. And when they're turned off, they pump a bolt of electricity through the power circuits that can find its way into the Macintosh.

The power supply built into the Macintosh has electronics to squelch most of these momentary power drains and surges, but it can't compensate for them all. Brownouts and surges, even the ones that last less than a hundredth of a second, can corrupt data in the Macintosh's random access memory (RAM). Some of the more powerful surges can even cause permanent damage, requiring extensive repair.

For extra protection against power fluctuations, consider buying a power line conditioner at a computer retail store. These cost from \$40 to \$150 and provide an extra measure of protection for the Mac's power circuits.

Cleaning Up Your Act

The second step toward proper Mac care is a clean and healthy home or office. If you're a lousy housekeeper, it'll quickly show up in the way your Macintosh behaves. Dust and soot in the air can settle between the Mac's keys, which can make typing a chore. Dust can also find its way inside the Macintosh, where it forms a blanketlike film on the internal electrical components and connections and makes the Mac heat up. Dust is to be avoided. Consider it Mac Enemy Number One.

Reduce airborne pollutants by regularly dusting and vacuuming the room you keep your Mac in. Keep the area around the Macintosh as clean as possible. If your Mac is near a window or an air vent, controlling dust will be difficult at best. Even so, clean as much as you can. If your Mac is stationed in an air-conditioned room, be sure that the vent filters are cleaned regularly.

If you live in a dry, dusty climate or use the Macintosh in an area where dust is hard to control, consider buying an electrostatic air filter at a department store (for about \$20). These power-operated cleaners work by actively attracting dust. They give off small charges of electricity, so keep them away from the computer and disks. The filters in electrostatic cleaners get grimy fast, so replace them promptly when they are soiled.

Surprisingly, the Mac is also vulnerable in the wet winter, when airborne dust is at a minimum. The reason is simple. Winter is heater season. If you use a kerosene- or wood-burning heater near your Mac, take note. Most wood heaters, even properly vented ones, give off soot and ash that can be hard to control. Kerosene heaters emit a fine spray of conductive oil that acts as a dust attractor when the oil settles on and in

(continues on page 49)

Suppliers of Cleaning Accessories

ACL, Inc.
1960 E. Devon Ave.
Elk Grove Village, IL 60007
312/981-9212
Staticide wipes for CRT screens.

Automation Facilities Corp.
Financial Plaza
Santa Barbara, CA 93105
805/687-7040
Wet/dry disk cleaner, computer
maintenance kit (with antistatic cloths
and flexible sponge-tipped wands).

Bib
Computa-Care Division
1751 Jay Ell Dr.
Richardson, TX 75081
800/527-4549
Cleaning accessories, including
antistatic CRT cleaner and
compressed air canisters.

CMPI
(Computer Maintenance Products Intl.,
Inc.)
7200 Jersey Ave. N
Minneapolis, MN 55428
612/566-1848
Computer care products, including
antistatic cloths and sprays, antistatic
spray for floors and carpets, lint-free
cloths, disk head cleaning disks.

C. M. & T., Inc.
5256 N.W. 163rd St.
Miami Lakes, FL 33014
305/624-1110
Computer-cleaning chemicals, including
antistatic carpet spray, lint-free cloths,
scratch remover, and computer care
kit.

Discwasher
1407 N. Providence Rd.
P.O. Box 6021
Columbia, MO 65205
314/449-0941
Computer care kits.

MWB Industries, Inc.
2013 Franklin St.
Detroit, MI 48207
313/259-1104
Treated, lintless, disposable cleaning
cloths.

National Systems Corp.
12417 Cedar Rd.
Cleveland, OH 44106
216/721-3309
Antistatic carpet and furniture spray,
antistatic mats.

Nortronics Company, Inc.
8101 10th Ave. N
Minneapolis, MN 55427
612/545-0401
Wet/dry process micro-floppy disk drive
cleaner.

PerfectData Corp.
9174 Deering Ave.
Chatsworth, CA 91311
213/998-2400
Cleaning supplies, including antistatic
spray for carpets and floors, lint-free
cloths, and CRT cleaner.

RSI Computer Care
4001 N. Ravenswood Ave.
Chicago, IL 60613
312/935-3080
Computer care kits, CRT wipes, antistatic
sprays, etc.

Tech Spray, Inc.
P.O. Box 949
Amarillo, TX 79105
800/858-4043
Techclean computer care kit with CRT
and keyboard cleaner, antistatic
swabs, more.

Texwipe Company
650 E. Crescent Ave.
P.O. Box 575
Upper Saddle River, NJ 07458
201/327-9100
Cleaning and computer care products.

Toward a Cleaner Imagewriter

The Apple Imagewriter requires little attention and can go on printing for weeks without problems. Even so, dust and paper bits can collect inside the works and must be removed periodically. In addition, it's a good idea to apply a dab of "3-in-1" oil to a felt lubrication ring inside the printer.

Cleaning the Imagewriter is a once-a-week proposition. Lubricating it is an every 6- to 12-month job. Make it a routine to take the paper and carrier covers off the Imagewriter and inspect the inside for excess dust and paper. If you use pin-feed paper, confetti from the holes will probably be scattered about.

Like the Macintosh, the outside of the Imagewriter can be cleaned with a brush, a dry, lintless cloth, or a cloth rag wetted down with ordinary household cleaner. The inside of the Imagewriter is best cleaned with a can of compressed air.

Before cleaning the inside of the Imagewriter, turn it off. If you're cleaning it after printing, stay away from the type head because it heats up.

If you use compressed air, direct the blast so that dust and paper are blown outward (see the figure labeled "Cleaning the Imagewriter"). To get rid of foreign particles caught way back in the mechanism, use a vacuum cleaner with a brush attachment. This keeps the particles from lodging themselves even deeper inside the Imagewriter.

When you clean, give special attention to the area immediately around the type head. Inspect the area between the type head and rubber printing platen for loose paper bits. Blow them out if possible, or use a brush to dislodge them.

A built-in paper-out detector is located behind the printing platen (the detector has a metal hood over it). When the detector senses that there's no more paper going through the mechanism, it signals the Imagewriter, which suspends printing. This helps prevent damage to the printing platen and to the type head.

The trouble is, the paper-out detector can get jammed, making it behave as if you're out of paper. To avoid this problem,

clean the detector regularly—another job for the can of compressed air.

Lubrication makes the type head slide along the carrier bar more smoothly. To lubricate the ring:

- Take the carrier cover off.
- Remove the ribbon.
- Clean the chrome carrier bar with a lintless cloth (the carrier bar is right in front; the type head rides on it).
- Locate the lubrication ring. It can be found under the neck of the type head (it attaches around the carrier bar).
- Apply a drop or two of light machine oil to the ring. Just about any kind of machine oil can be used, as long as it doesn't contain antirust chemicals.



Cleaning the Imagewriter

Use compressed air to clean the inside of the Imagewriter. Blow dust and paper bits outward.

- Slide the type head back and forth along the length of the carrier bar a few times to spread the oil. You might want to place a small sticker inside the Imagewriter or on the underside of the carrier lid to mark the dates oil is applied to the lubrication ring.

Quite a number of printing problems are caused by a worn-out ribbon. Replace a ribbon when the print becomes gray. It's not a good idea to reuse old ribbons by reinking them or by spraying them with a solvent like WD-40. The reason: pieces of an overused and frayed ribbon can get caught in the needle-sized pins of the type head, bending them into oblivion. Thus speaks the voice of experience.

(continued from page 46)

the Mac. The job of cleaning a Mac used in close proximity to a heater can be a frustrating one. You can make it much less of a chore if you place the heater as far from the Mac as possible.

Spit and Polish

Dust and dirt can never be fully avoided; some always seems to sneak by the best filters and housekeeping measures. Make periodic cleaning an integral part of your quest for a healthy Mac.

Begin by cleaning the Mac's exterior (see Figure 1). A thick, soft sable brush—the kind used by artists—is perfect for this (for best results, get a new brush and don't use it for anything else). Start at the top of the Mac and work down, and don't forget to clean between the keys. Most importantly, remove all the accumulated dust around the Mac's vent slots. Brushing the vents is important because the Mac's cover can't be safely removed to clean the insides. Always leave opening the Mac's case to a qualified technician.

Stubborn spots can be wiped clean with a lintless cloth. Most photography stores sell lintless antistatic wipe cloths made for cleaning camera and darkroom gear. These cloths work perfectly well with the Mac, too. Like the paintbrush, the cloth should become the sole property of the Mac, and shouldn't be used for drying the dishes or wiping off your car. You can also buy computer-cleaning kits, which include antistatic wipes, at most computer stores (see also "Suppliers of Cleaning Accessories").

Occasionally, you need to apply a bit of muscle to remove sticky dust and grime from the Mac. You can use any medium-strength household spray cleaner, such as 409 or Fantastik. But be careful how you apply the spray. For best results, lightly dampen a clean dish towel (avoid paper towels) and spray the cleaner on it. Don't apply the spray directly to the Mac, since the liquid can ooze into places where you don't want it, like inside the vent slots or between keys.

As a general rule, avoid heavy-duty and caustic cleaners. They can do more harm than good. Rather, use only cleaners specifically recommended for application to plastic. Whatever you do, stay away from petroleum-based cleaners, like paint remover or lacquer thinner, which can soften, weaken, and eventually ruin the Mac's plastic case.

Dust particles are smart beasts. They know that the deeper they travel into the Mac, the harder it is for you to get them out. You may find that the brush and cloth combination can't get into every crevice of the Mac. What to do? While you're at the photo store buying the lintless cloth, pick up a can of compressed air. Now, when you need to get out stubborn, hard-to-reach dust, blow it out.

There are several sizes of compressed air cans to choose from. If you're on a budget, get the pocket-sized cans. These don't have very many air blasts in them, and they're costly in the long run. But they can be used straight out of the box. They cost about \$2 a can.

The larger sizes of compressed air cans, which cost in the neighborhood of \$5 to \$8, require a separate valve/nozzle (an extra \$7 to \$10 investment). The valve/nozzle can be reused, of course. Your added investment in the bigger cans, which have several hundred shots of air packed in them, is well worth it. They're more powerful and more efficient than the pocket-sized cans.

By the way, be sure to use only a commercially available clean-air system. Never try to make do with things like a bicycle pump, a paint compressor, or a vacuum cleaner with the hose on the blower part (rather than the intake). The reason is that the air from these devices isn't clean. Cleaning the Mac with one would be like taking a bath in muddy water. While compressed air isn't particularly cheap, the proper tools are well worth the money.

The Mac is famous for its crystal-clear graphic images. Dust and smeared fingerprints on the Mac's video display tube can dull the images. But don't be like most Mac owners and wipe down the Mac's screen with glass cleaner. Glass cleaner contains chemicals that can wreak havoc on the Macintosh screen, which has a special plastic antiglare coating. Your best bet is to use an antistatic cloth or cleaning solution specifically designed for use on computer cathode-ray tubes (CRTs). The biggest advantage of this type of cleaner is that it repels dust, while the solution in regular glass cleaner attracts dust.

The Wash-and-Wear Mouse

Now that the exterior of the Macintosh is bright and shiny, it's time to turn to the mouse. If you've never cleaned the Mac's mouse, do it now. In fact, to avoid potential trouble, clean the mouse weekly.

You'll know you have a dirty mouse if the on-screen pointer skips when you move the mouse. In its worst condition, a dirty mouse moves the pointer in one direction only, or it doesn't move the pointer at all.

If you find the mouse gets dirty more often than it should, it's likely that you're not using it on the proper surface. The best surfaces are tables and desktops of varnished (but not waxed) wood, Formica, or metal.

Macintosh Troubleshooting

Problem	Symptoms	Possible Causes	Cures
The Mac	Blank screen	1. Mac unplugged 2. Brightness control too low 3. Internal fuse blown	1. Plug Mac into known good outlet; check power plug that connects to Mac 2. Turn brightness control up 3. Take Mac to repair shop
	Mac won't start	1. Disk bad 2. Drive heads dirty 3. Faulty start	1. Check with known good disk 2. Clean drive heads 3. Turn Mac off and on again and reinsert disk
	Mac shows Mac icon with frowning face	1. Disk is not startup disk 2. Startup disk bad	1. Turn Mac off and on and restart with startup disk 2. Turn Mac off and on and restart with known good startup disk
	Finder won't load; Mac "crashes" or stops working	1. Desktop file damaged 2. Disk damaged	1. Turn Mac off and on; restart, holding down ⌘ and Option keys until Finder loads 2. Try the above. If it doesn't work, disk may be damaged beyond use
	Lines in screen	1. Program crashed 2. Disk bad 3. Drive heads dirty 4. Hardware problem	1. Turn Mac off and restart program 2. Turn Mac off, eject disk (by holding down mouse button while turning on Mac) and insert new one 3. Clean drive heads 4. Take Mac to repair shop
Pointer inactive	Moving mouse doesn't move pointer	1. Mouse not plugged in 2. Mouse dirty 3. Program crashed 4. Mouse faulty 5. Mac faulty	1. Plug mouse in, check for bad connection 2. Clean mouse 3. Turn Mac off and restart program 4. Take mouse to repair shop 5. Take Mac to repair shop
Keyboard inactive	Typing on keyboard does nothing, or doesn't always work	1. Keyboard not plugged in 2. Keyboard dirty 3. Program crashed 4. Keyboard faulty 5. Mac faulty	1. Plug in keyboard; check for tight connection on keyboard and Mac 2. Clean keyboard 3. Turn Mac off and restart program 4. Take keyboard to repair shop 5. Take Mac to repair shop

	Problem	Symptoms	Possible Causes	Cures
The Disk Drive(s)	Drive won't record data	Disk won't take on any data	1. Disk locked 2. Disk full 3. Disk damaged	1. Eject disk (⌘-Shift-1 for internal drive; ⌘-Shift-2 for external drive), unlock disk, and reinsert 2. Eject disk and insert new one 3. Eject disk and insert new one
	Drive won't read data	Drive spins and seems to work but nothing can be retrieved from it	1. Drive dirty 2. Disk bad	1. Clean drive head 2. Check with known good disk
	External drive doesn't work	External drive plugged in but won't run	1. Connection faulty 2. Drive faulty	1. Check for tight connection between Mac and drive 2. Take drive to repair shop
The Imagewriter	Power off	Imagewriter won't turn on; Power light won't glow	1. Imagewriter not plugged in 2. Fuse blown	1. Plug into known good outlet; check power plug to Imagewriter 2. Replace fuse (2 ampere, 3AG)
	Imagewriter won't print	Imagewriter is on but won't print	1. Imagewriter deselected 2. Connection bad 3. Carrier cover off 4. Paper ran out 5. Paper-out detector dirty 6. Program not working 7. Imagewriter faulty	1. Press Select button so that Select light glows 2. Check connection of cable 3. Replace cover; press Select button 4. Put in more paper 5. Clean detector 6. Try printing again 7. Take Imagewriter to repair shop
	Paper jams	Paper keeps jamming in mechanism	1. Paper not inserted correctly 2. Too much back tension on paper 3. Paper path blocked	1. Realign and reinsert paper 2. Make sure paper feeds smoothly 3. Clean path of paper bits
	Print weak	Imagewriter prints, but quality is poor	1. Ribbon bad 2. Head-to-platen control misadjusted 3. Impression and alignment misadjusted	1. Replace ribbon 2. Readjust head-to-platen control for proper paper thickness (see Imagewriter manual for details) 3. Take Imagewriter to repair shop

Top Roller
Side Roller
Idler

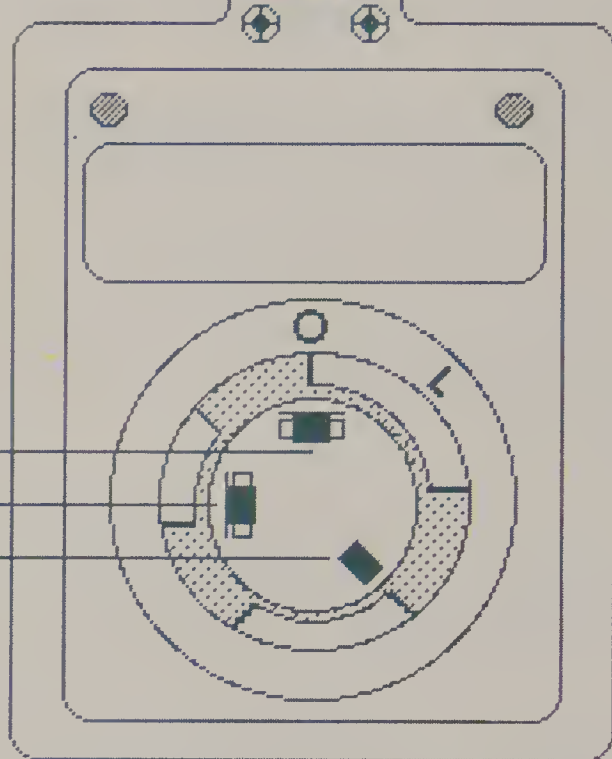


Figure 2

There are three rollers inside the mouse, which when dirty can cause the pointer on the Mac's screen to jump.

You can also use a plastic or resin pad. Some computer stores carry these pads; you can also buy them at plastics outlets. A marble pastry board isn't a bad surface either.

Whatever you do, avoid using the mouse on cloth and paper surfaces, including desk blotters and calendars. The ball in the underbelly of the mouse can pick up lint and paper fuzz from these, which can interfere with the inner workings of the mouse.

To clean the mouse, open it by turning it upside down and twisting the black plastic baseplate counterclockwise. The small (and nearly invisible) nub on the baseplate should line up with the "O" printed on the bottom of the mouse.

Flip the mouse over again, but be sure to catch the baseplate—and the rubber ball that comes out with it—in your palm. Be careful with the rubber ball when



Figure 3

The best tool for cleaning the mouse's rollers is a videocassette recorder cleaning kit.

it's out of the mouse. It's not a golf ball, and yes, the cat would really enjoy playing with it. Needless to say, both activities would ruin the ball and make your mouse useless.

Inside the mouse are three rollers, two of which are hooked up to the mouse's built-in sensing electronics (see Figure 2). When these rollers are dirty, they cause the pointer to skip and jump. Unfortunately, the rollers often need more than a quick wipe with a cloth. The best way to clean them is with a video-cassette recorder cleaning kit (the kind designed to clean video heads). These kits include chamois-tipped or sponge-tipped cleaning wands and a bottle of cleaner containing alcohol and Freon. A second choice for mouse cleaner is plain rubbing alcohol.

To clean the rollers, wet the tip of the wand with the cleaner and gently rub each roller. Repeat the process several times to make sure all the accumulated dust and oil is removed (see Figure 3).

The Freon in video head cleaner is noncaustic and nonflammable, so there's no need to worry about getting some on the plastic parts of the mouse. But go easy with it. Freon cleaner is strong stuff; just a dab will do. And remember to replace the cap on the cleaner bottle as quickly as possible. Freon is volatile and evaporates quickly.

Before you put the mouse back together, take a can of compressed air and give the inside of the mouse a few shots of oxygen. Wipe the ball clean with the lintless cloth (see Figure 4). Replace the ball in the mouse (avoid undue handling, which will get it oily) and slip the baseplate back on. Twist the baseplate clockwise until it locks into position. The nub should line up with the "L."



Figure 4

The rubber ball in your mouse should be handled carefully. Clean it with a soft, lint-free cloth.

The Delicate Disk Drive

Of all the parts of the Mac to keep clean, the disk drive is the most important and most difficult. The Mac's disk drive, as you probably know, uses a magnetic head to record information on a thin flexible platter. The platter is coated with the same substance used in video- and audiocassette tapes.

The coating, whether it's on media meant for sound, pictures, or data, has a tendency to flake off over time. What's worse, the flakes build up on the surface of the head, making it hard for the drive to record and play back information. Therefore, you should routinely clean the head to remove the built-up coating.

The head in the Mac's drive is hard to reach, and while you could use a video head cleaning wand, an easier way exists. Use a disk drive cleaning kit. Several companies offer cleaning kits for the Mac's 3½-inch drive (see "Suppliers of Cleaning Accessories"). And contrary to what you may have heard, there is no harm in using them.

The cleaning kits for the Mac drive use a wet or wet/dry cleaning method (in contrast to dry, abrasive cleaning, which can harm drive heads). A cleaner is sprayed onto a fiber-based platter, which is then inserted into a holder (see Figure 5). The holder is placed in the drive, where the disk inside spins and cleans the head. The exact routine varies, depending on the kit you buy. If you use one of these kits, you will probably spend only a dollar or two each time you clean the Mac drive. The effort is worthwhile, because most computer technicians charge \$50 to \$60 for a single cleaning.

How often should you clean the Mac's disk drive head? If your use of the Mac is average, the head doesn't need cleaning more than once or twice a month. If you use your Mac infrequently, you'll be able to get by with cleaning the head every three to six months.

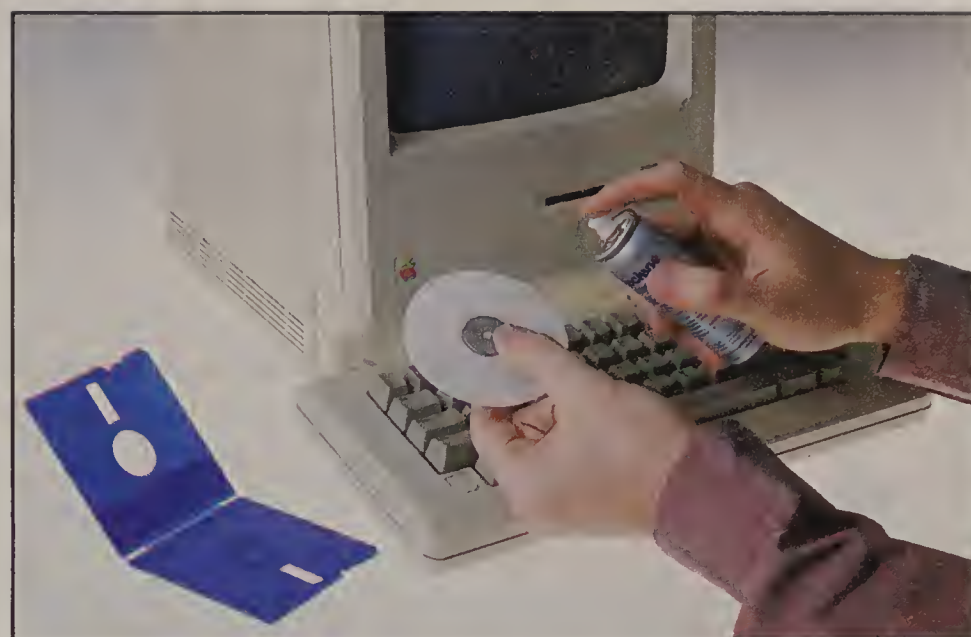


Figure 5

It's important to clean your Mac's disk drive head regularly. The best way is to use a special disk drive cleaning kit.

The Whole Mac

What other parts of the Mac should you clean? If you have an Imagewriter, keep it in top working order by cleaning it every week (see "Toward a Cleaner Imagewriter"). If you've been blessed with an external disk drive, don't forget to give it the same treatment you give the Mac's internal drive.

If, for any reason, the Mac, the Imagewriter, or the external drive doesn't work properly, refer to the "Macintosh Troubleshooting" chart. Take your time diagnosing the problem. Most of the time the problem is simple: a blown fuse, a loose connection, or a faulty extension cord. Many difficulties, especially those concerning the disk drive or the Imagewriter, are caused by poor preventive maintenance—in short, insufficient cleaning. Before taking your Mac and its accessories to a repair shop, clean everything in sight. □

■■■■■■■■■■ Gordon McComb is the author of the *Macintosh User's Guide* (Howard W. Sams) and a frequent contributor to *Popular Science* and the *Computer Buyer's Guide* and *Handbook*.

This holiday season something special for all

Finally there's a friendly face you can turn to for all your Apple computer gift-giving needs. Haba Claus, one of the family at Haba Systems.

No one else brings you such a unique line of products for Apple's unique line of computers, including Macintosh™, //e™, //c™, and ///™.

And no one else offers you such a wide price range either. Haba Claus will let you spend as little as \$30.00 or as much as \$500.00* — depending on how special the Apples of your eye are.



Just be sure you don't let them know you're planning to give something tempting from Haba this year. Otherwise they'll open their presents faster than you can say "Haba Happy Holiday".

Macintosh

Habadex™

The Ultimate Desktop Management program features directory, appointment calendar, automatic phone dialing, form letters, and mailing labels. \$199.95

HabaCom™

Communications software that lets your Mac talk to other Macs or remote computers, plus link up to 8 services like The Source, CompuServe, and Dow Jones. \$99.95

WindowDialer™

Desk Accessory program that lets you instantly display 200 names and phone numbers and automatically dial calls - without leaving your current program. \$49.95

WindowCalendar™

Desk Accessory program that lets you instantly display, enter, or change appointments by the day, week, or month - without leaving your current program. \$49.95

HabaDisk™ for Macintosh

3.5" external drive with SoftBundle™ software package containing Habadex (see above) and QuickFinder™ - a program that instantly displays, boots, and opens all applications and files on both system drives. \$449.95

Haba Claus has the Apples of your eye.



So instead of dashing all over town to do this year's holiday shopping, why not let Haba Claus do it for you? He's got special Haba Systems products for all the Apples of your eye.

And if you've been good this year, he may even have something extra-special for you, too.

Just be sure to keep your gift giving plans under wraps. That is, if you want this season's most tempting gifts to stay that way.

Visit Haba Claus at your nearest Apple dealer today. And Haba Happy Holiday all year long.

Apple //e, //c, ///

HabaMerge™

Form Letter/Mailing Label program for AppleWorks™ or /// E-Z Pieces™ that links data base and word processor for letter perfect mail-merges every time. \$69.95

HabaTemplates™

54 pre-defined spreadsheet and data base formats for use with AppleWorks or /// E-Z Pieces. Gets you up and working quickly, plus you can modify them to suit your needs. \$29.95

Silent Butler™

Bill-Paying/Check-Writing program for //e and //c that maintains checking and savings accounts, and using exclusive CheckHolder™, automatically prints payments on your existing checks. \$69.95

HabaDisk™ for //e and //c

3.5" external drive with SoftBundle software package featuring HabaTemplates, HabaMerge, HabaCom, HabaMemoryManager™, plus the application for down-loading AppleWorks to 3.5" program disk. \$449.95

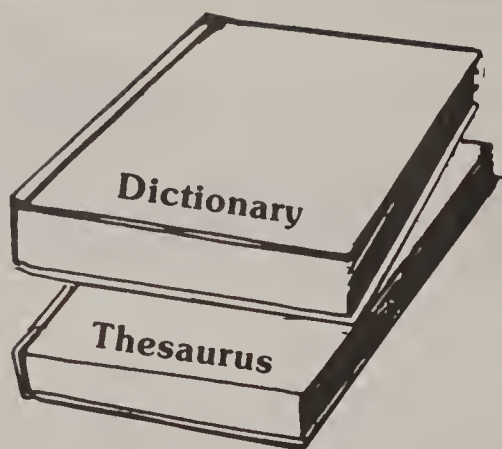


haba systems

Making Apples more tempting than ever™



Circle 32 on reader service card

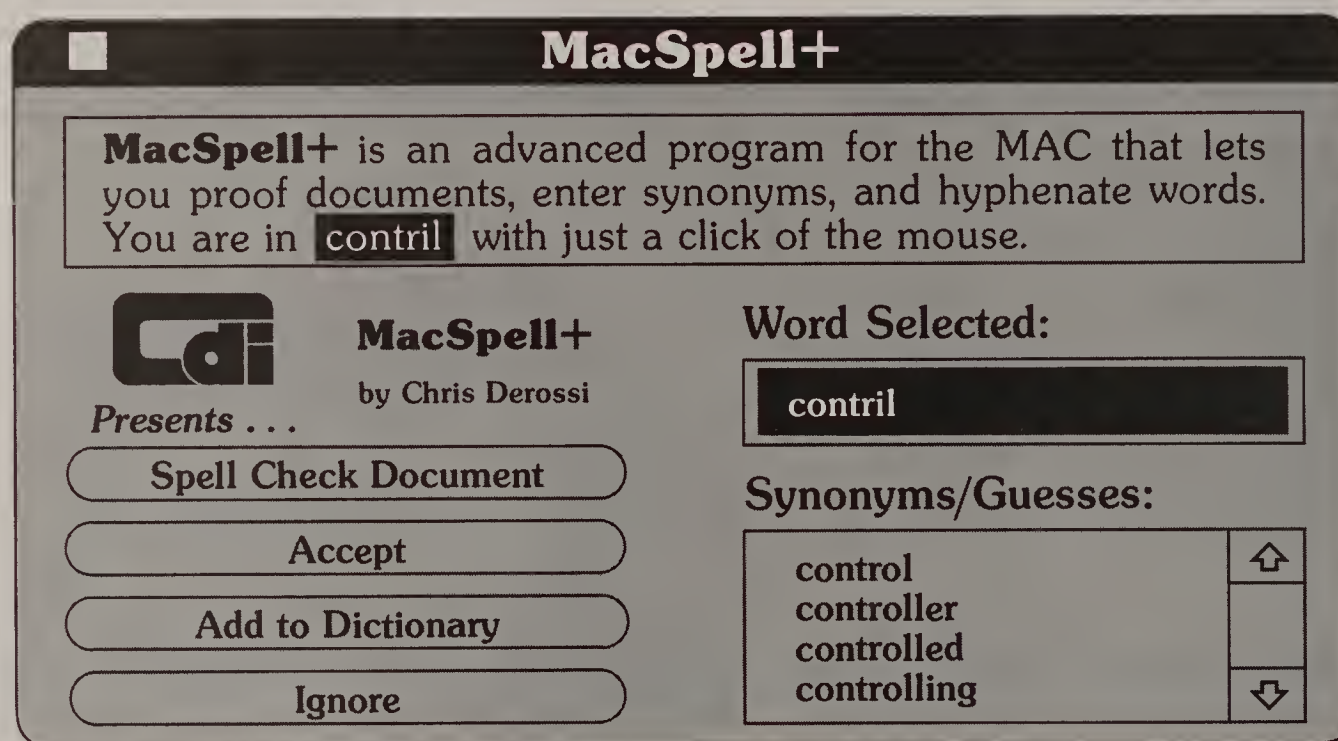


MacSpell+™

Interactive Spelling Checker For Your Macintosh™ with Thesaurus and Word Hyphenation

As easy to use as it is **POWERFUL**, **MacSpell+** provides you with three tools you will need to compose documents with confidence and flair!!

+Spelling Checker: **MacSpell+** is an interactive spelling checker — YOU DO NOT HAVE TO QUIT THE WORD PROCESSING PROGRAM IN ORDER TO PROOF YOUR DOCUMENT! As a result, you save time and effort. **MacSpell+** contains over 30,000 words in its dictionary and provision for you to add over 2,500 words of your own . . . and all with a click of the mouse;



Choose one of the **MacSpell+** suggestions or type in your own spelling. You may also add the word to your dictionary. It is EASY AND CONVENIENT.

+Thesaurus: **MacSpell+** contains a convenient thesaurus to enable you to select a synonym at a click of the mouse. Merely "select" a word from your text and a list of synonyms will appear. Click your choice and it instantly replaces the word you selected from your text. Again, the thesaurus is interactive and you never have to quit your word processor.

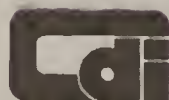
+Word Hyphenation: **MacSpell+** also contains an interactive word hyphenation feature which enables you to select the proper word hyphenation points by clicking the mouse. The hyphenated word is then automatically inserted into your text.

MacSpell+ will improve your efficiency and streamline your word processing function with only a click of the mouse!! only

\$9900

ORDER TODAY OR SEE YOUR DEALER!!

Creighton Development, Inc. 4931 Birch Street, Newport Beach, CA 92660
(714) 476-1973



TM—MacSpell+ is a trademark of Creighton Development, Inc. Macintosh is a trademark licensed to Apple Computer, Inc.

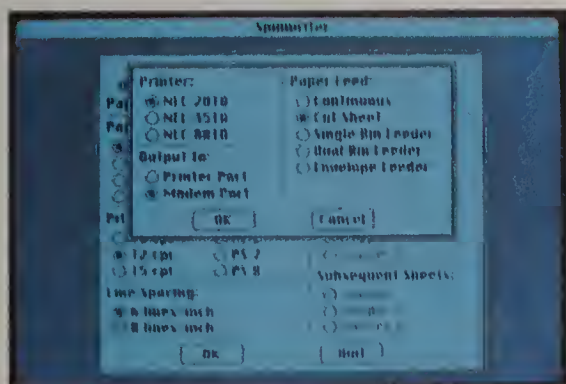
Circle 95 on reader service card

NOW MACINTOSH USERS CAN GET LETTER-QUALITY PRINTING.



Introducing the Spinwriter/Macintosh connection.

There are times when even a Macintosh™ user doesn't want printing that looks like it came from a computer. Important business letters. A make-or-break presentation. A resume. A legal brief.



Works with Spinwriter printers 2010, 3510 and 8810.

Now Macintosh users can have genuine letter-quality printing. And not just ordinary letter-quality but Spinwriter® letter-quality

printing.
With NEC's

new accessory kit for the

Apple™ Macintosh.

Which consists of a diskette (plus a backup), an interface cable and a manual. This easy-to-use package lets you control printing on your Spinwriter with your mouse.

Spinwriter printers have unique capabilities.

You can do more things with a Spinwriter and your Macintosh than other letter-quality printers. Like use our more than 80 different type styles. Or print in a foreign language. Or have proportional spacing.

You can also use a variety of NEC-designed and made paper handlers which let you do such things as address envelopes automatically, right along with your letters.

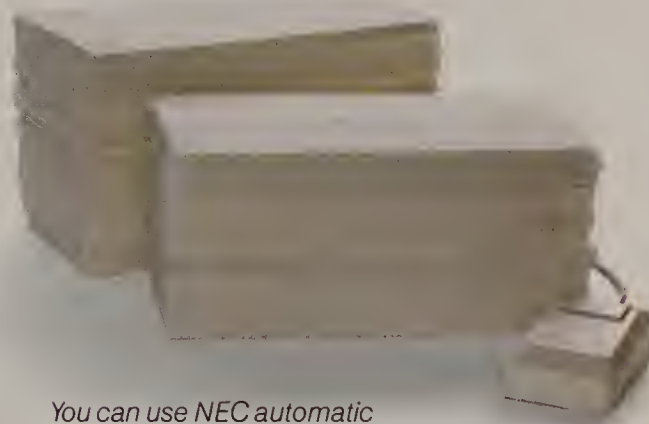
Spinwriter printers also last a long time. In fact, their record for quality and

reliability is unmatched.

And survey after survey shows they are the preferred letter-quality printer of personal computer owners.

See your computer dealer, now.

Ask for a Spinwriter printer demo and see what it can do for your Macintosh. Or for more information call 1-800-343-4419; in MA call (617) 264-8635.



You can use NEC automatic paper-handlers with the mouse.

Find out why more and more Apple users are saying, "NEC and me."

Yes! Please send me more information on:

- ☐ Spinwriter 2010
- ☐ Spinwriter 3510
- ☐ Spinwriter 8810
- ☐ Spinwriter/Macintosh connection

Name _____
Title _____
Company _____
Address _____
City _____
State _____ Zip _____

NEC Information Systems, Inc., Dept. 1610,
1414 Massachusetts Avenue, Boxborough, MA 01719

NEC

NEC Information Systems, Inc.

Circle 142 on reader service card

Two Volumes Now Available:



Mac the Knife

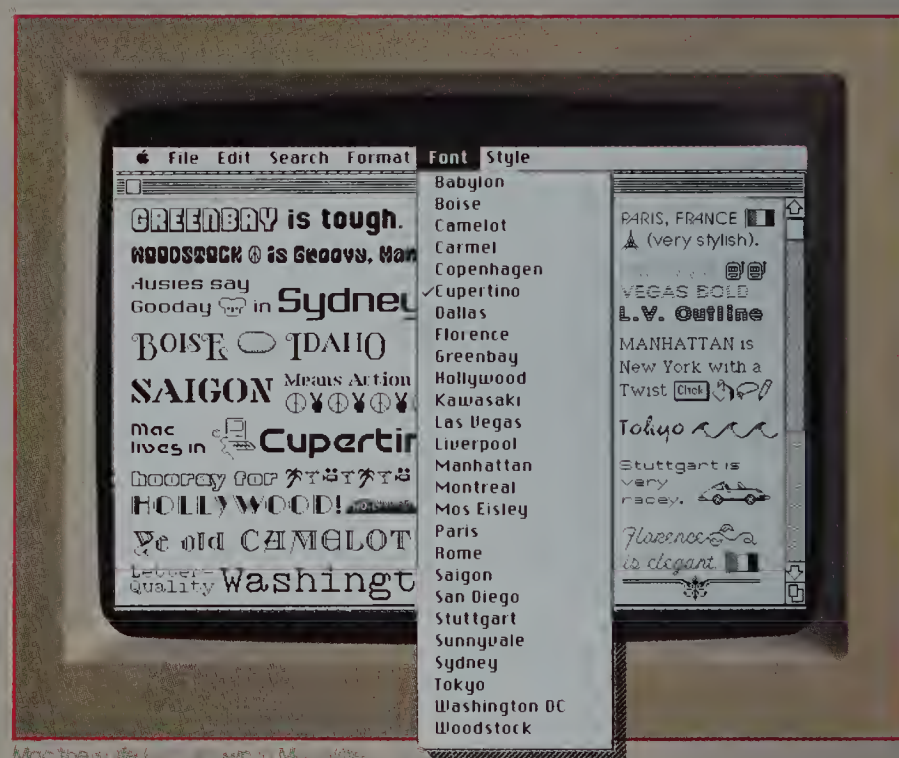
VOLUME ONE: A CLIP-ART TREASURY

VOLUME TWO: WORLD-CLASS FONTS!

A Treasury of Clip-Art for the Macintosh™ with MacPaint™

Art for the rest of us. When you first laid eyes on the scrapbook pictures that came with your Mac, didn't you wish you had a disk full of such clever illustrations?

Well, now there is such a disk—**Mac the Knife Volume One**. It's chock full of over 500 useful illustrations, borders, business graphics, icons, maps and textures... all in convenient MacPaint files. They're ideal for publications, presentations, ads, coupons, flyers, letters, greeting cards or just plain fun!



A Collection of over Two Dozen Fonts for the Macintosh™

Man does not live by Chicago alone. Do you yearn for the romance of Camelot, the thrill of Japanese brush calligraphy, or just want your Imagewriter to print like your good ol' typewriter? Then what you need is to put on a new face—a new typeface! Or two... Well, how about two dozen new typefaces for the Macintosh?

Mac the Knife Volume Two is two dozen fonts in all kinds of sizes—and styles: from decorative display faces to practical text fonts. Our fonts install easily with Apple's Font Mover utility, and work in most Mac applications that sport a Font pull-down menu. Most Mac the Knife fonts are complete with foreign characters, many with fractions, lots with hidden icons, and even some with built-in borders.



A B C D E F G H I J K L M N O P Q R T U V W X Y Z



Also New Arcade Game!



MAC ATTACK

• CARMEL •

COPENHAGEN

DALLAS

Florence

アイウ KAWASAKI コサツ

LAS VEGAS

I LOVE LIVERPOOL

Montreal

Eisley

PARIS

R·O·M·E

SAN DIEGO

SUNNYVALE

Tank Commanders Needed

To command the first arcade-quality
Tank simulation for the Macintosh

You're stationed at the controls of a radar-equipped Sherman Tank, rumbling across the vast landscape of Alaska's battle zone. It's the brink of World War III and you alone defend the city during invasion. To survive, you must out-maneuver the conventional and heat-seeking missiles that opposing tanks and fighter aircraft hurl at you. Only a precise burst from your own tank's cannon can destroy the enemy.



MacAttack features life-like 3-dimensional animation and simultaneous sound. With the Macintosh mouse and keyboard you control the speed and direction of your tank, as well as cannon/turret aim and firing. Radar, Ammo-load, and scoring are fully-automatic. At last, Miles Computing brings the thrill of arcade gaming to your Macintosh!

All this now available at a price you won't believe. And watch for another arcade-quality game coming in December, MacWars.



Miles Computing, Inc.

7136 Haskell Avenue, Suite 212
Van Nuys, California 91406
(818) 994-7901

Telex 595863, MILES COMP / TWX 9103337664

Illustrations and fonts in this ad are not necessarily original size.

Circle 37 on reader service card

Get Info

Macworld's tutor answers questions about using the Mac

Lon Poole



Get Info answers questions about the Macintosh and how it works. Most inquiries deal with application programs, but no topic is too elementary or too advanced. Discussions range from setting up the Mac to programming in BASIC and Pascal. When you need advice about using the Mac, drop me a line. I cannot respond to individual letters, but I will answer the most representative questions.

Every month about 25 percent of the mail I get reports strange encounters with the Mac. Some people find dire-straits alert boxes (the ones with a bomb icon) cropping up, indicating bugs in the software. Others describe symptoms—such as the screen filling with static or documents not being reliably copied from one disk to another—that suggest hardware malfunction.

We'd all like to think that the Mac is flawless, but of course it's not. You won't see any halos hovering over the heads of the Mac's design team. The Mac's hardware and software designers have done a great job, but they have also made some mis-

takes. Don't be surprised if you discover that your Macintosh behaves strangely now and then. A computer and its software are complex products, so don't expect them to have the personality and reliability of an electric toaster. And certainly Apple and the third-party software and hardware developers want to make their products as bug-free as possible.

In the meantime, what can you do about these hidden faults? Saving your work to disk regularly and backing up valuable information can protect your work from unexpected program errors or "undocumented features." If you're having chronic problems, they may be hardware-related. This is especially likely if the same kind of difficulty occurs with different programs. Don't suffer in silence. Compare notes with other Mac users, or check with your dealer. If no one else is having the same trouble, something may be physically wrong with your machine. Getting your Mac fixed may eliminate the problem.

Don't misconstrue my advice as an attempt to sidestep your questions or cover up for Mac developers. Even if I could duplicate, research, and respond to every individual reported error or breakdown, my answer

would not help the next time you discover an unexpected problem. You must accept the fact that there will be times when you have to simply shrug your shoulders, grit your teeth, and go back to the most recent disk version of your work.

This month's column answers five questions. An avid letter writer is looking for a quick, simple way to print envelopes in *MacWrite*. A second person noticed that pictures printed by *MacWrite* are stretched from left to right and wants to correct the distortion. A new *MacPaint* user can't figure out how to provide all the disk space *MacPaint* seems to need. One person wants to know how to ship Mac disks safely. Finally, a user wants to know what information resides in the System file besides all the fonts.

Addressing Envelopes

Q. I've had trouble finding the best way to address envelopes with *MacWrite* and the Imagewriter. I copy the address from the top of the letter to a new document and set the tabs so that the address prints at the

proper place on an envelope. It would be more convenient if I could select the address on the letter and print just the selected text. The time saved may seem trivial until you are faced with 10 to 15 letters every day. Can you help?

*Jobathan Wommack
Napa, California*

A. The fastest and simplest method for addressing an envelope is similar to the one you now use. Before printing your letter, try the following:

- Scroll to the beginning of the document by dragging the scroll box to the top of the scroll bar.

- Select all lines of the address and choose Copy from the Edit menu to place a copy of the address in the Clipboard.

- Scroll to the end of the letter by dragging the scroll box to the bottom of the scroll bar. Don't worry if you can't see the letter in the document window. It's only temporarily out of view.

- Click on an insertion point at the end of the letter by placing the pointer anywhere past the end of the letter and clicking the mouse button. When you click past the end of a document, *MacWrite* automatically puts the insertion point after the last character in the document.

- Choose Insert Page Break and then Insert Ruler from the Format menu. Choosing these options creates a new page with its own formatting ruler, below which you can insert the address.

- Choose Paste from the Edit menu, putting a copy of the address below the new ruler.

- Drag the indent marker to about the 3½-inch mark on the ruler. The copied address shifts to the right, lining up with the new position of the marker.

The letter is now set up to print the address on a separate page. You can change the letter before printing it without affecting either the position or the accuracy of the envelope address. Change the envelope address to 12- or 14-point size if you prefer, even if the letter's text is in a smaller size.

To print on single sheets of paper, follow these steps:

- Choose Print from the File menu. In the Print dialog box that appears, select the print quality you want.

- Select the All and Cut Sheet paper feed options and click the OK button to begin printing.

- *MacWrite* displays a dialog box to advise you each time you must feed another sheet of paper into the printer.

- After you have printed the last page of the letter, *MacWrite* asks you to insert another sheet of paper for the address. Put an envelope in the printer instead of another piece of paper.

You may have to experiment at first with the left-right alignment of the envelope in the printer and with the indent marker position in the ruler to get the correct address position. Once you learn a combination that works, this method should prove superior to the one you have been using.

As for a return address on a number 10 (business-size) envelope, your best bet is a rubber stamp. Although you can print the address using *MacWrite*, the process involves some finagling with sideways printing.

Distortion Dilemma

Q. I have noticed that when I create a drawing in *MacPaint* and paste it into a *MacWrite* document, the Imagewriter produces distortion in the drawing. This problem is particularly obvious when you work with circles such as pie

charts. The circles end up vertically elongated and appear as ellipses. The distortion does not appear on the Mac's screen, however. Why does this happen, and is there a cure?

*Manuel V. Key
Clayton, Ohio*

A. You can get correctly proportioned pictures in a printed *MacWrite* document. Before printing, choose Page Setup from the File menu. In the dialog box that appears, select Tall Adjusted. The next time you print, the circles will look like circles—not ellipses.

The Tall Adjusted print mode does have some side effects, however. The whole document—text as well as pictures—is widened about 13 percent on the printed page. For example, text that was supposed to take 5¾ inches will take 6½ inches. The expanded characters that result from selecting Tall Adjusted are somewhat lower in quality than the characters produced with the Tall option. The degree of difference in quality depends on the font, font size, and quality (high or standard) chosen in the Print dialog box. By the way, the Wide option has the same proportions as Tall Adjusted.

MacPaint's Big Appetite

Q. I have a *MacPaint* disk that contains one 25K document and 60K of usable storage space. But as I work on the document, I get notices that I am running out of disk space. When I acknowledge the alert box, I am returned to the desktop. Why?

*Tony Bernhard
Davis, California*

A. In an earlier column (*Get Info*, May/June) I explained that *MacPaint* needs lots of elbow room on the disk—as much as 102K. To make that kind of space available on a one- or two-drive Mac, you have to set up a *MacPaint* application disk that contains nothing but *MacPaint*, the System Folder, and the Empty Folder.

You can set up such a disk by dragging all the other icons into the Trash. Even then, a System file with extra fonts or font sizes or a Scrapbook with lots of clippings can reduce available disk space to 95K or less. All your documents should reside on separate data disks containing nothing but an Empty Folder.

With a single-drive Mac, using a separate data disk involves swapping disks whenever you open or save a document. The larger the document, the more you have to swap disks to open or save it. Choosing Open or Save As

from the *MacPaint* File menu presents a dialog box that includes an Eject button. Clicking the Eject button ejects the currently inserted disk (usually the application disk). After the disk is ejected, remove it and insert a storage disk on which to save or open a document. The name of the inserted disk appears just above the Eject button.

With a two-drive Mac, you can put the data disk in one drive and the *MacPaint* application disk in another. No disk swapping is required. The Mac switches between the drives as needed. And the Mini-Finder that appears when you choose Open or Save As (or Save if the document is new) includes a Drive button. You click the Drive button to select the drive used for opening or saving. The name of the currently selected drive appears above the Eject button, as usual.

Mailing Disks

Q. I would like to send some disks that contain important information to a friend in another city. He told me I could just drop them into a padded envelope, but I am worried about the stamping machines and magnetic fields used by the postal service. How should I package the disks?

*Stewart Abramson
Philadelphia, Pennsylvania*

A. Your disks are safest if you send them in padded envelopes. If you do lose a disk because of rough handling, you can always send a copy (re-

member to make a backup). Backup disks are the most effective form of insurance against the perils of shipping—better than the fanciest disk mailer you can buy.

The postal service uses stamp-canceling machines, but you can elude them by printing “Hand Cancel” near the stamp. The postal service also uses magnetic fields and X-rays of unknown intensity for undisclosed purposes. If the thought of putting your disks through this exposure disturbs you, write “Do Not X-Ray—Contains Sensitive Computer Data.”

Inside the System File

Q. According to the Get Info window, the System file on my *MacPaint* disk contains 132,608 bytes. The Font Mover utility indicates that the fonts use 74,630 bytes of the System file, but what's using up the other 57,978 bytes on my disk?

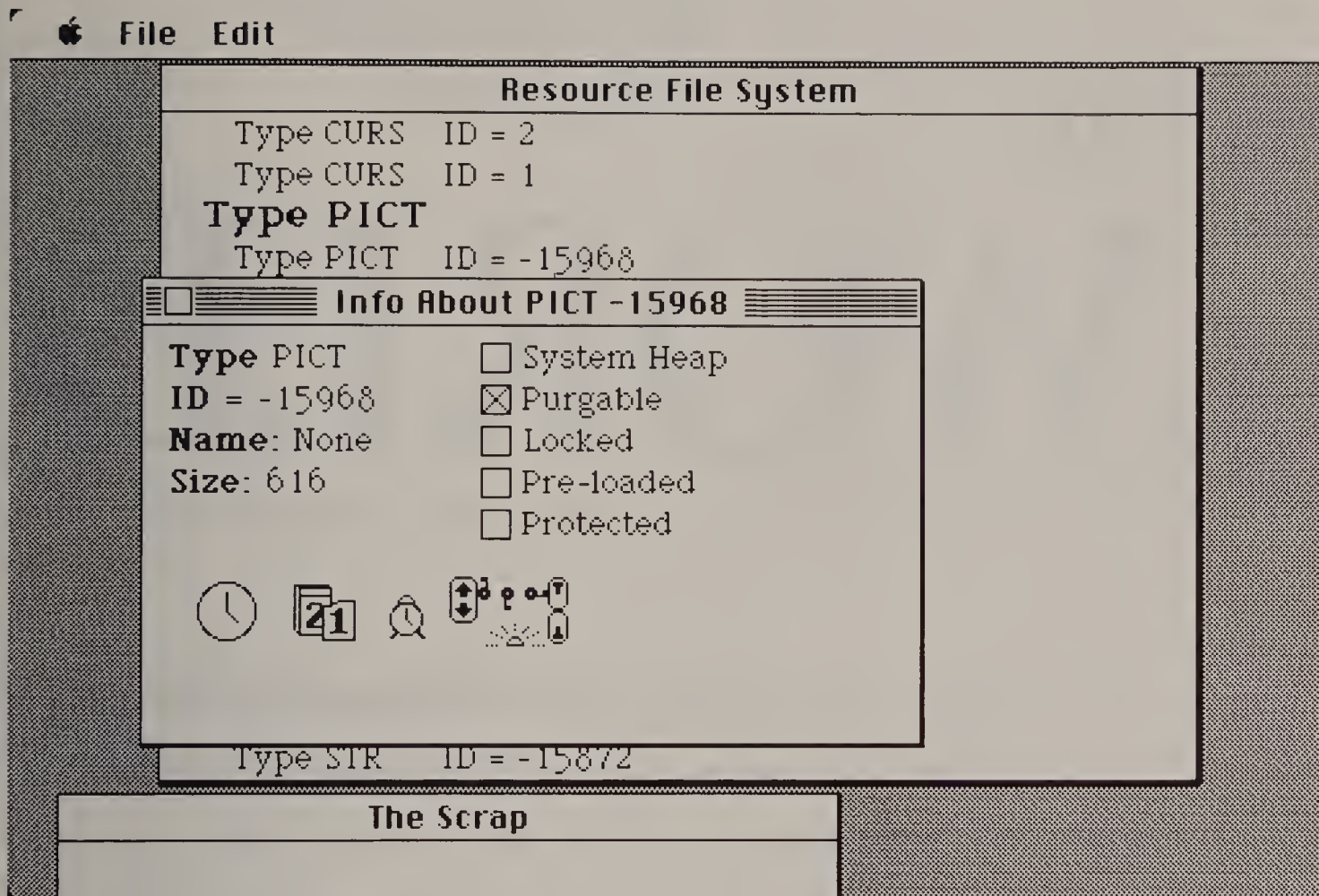
*Bert Farnsworth
Chattanooga, Tennessee*

A. Although the System file seems to be a disk space hog, it actually conserves disk space. The System file serves as a public library of useful information for many programs. In addition to fonts, it contains definitions of what windows, pointers, icons, buttons, and scroll bars look like. These pieces of information are called resources, and the System file is also called a resource file.

Unlike a real library, however, the System file lends unlimited copies of its resources to application programs and never expects the resources to be returned. Every program can hold a private collection of resources (resource file), but these private collections need never duplicate the resources stored in the System file. The System file actually saves disk space because application programs don't need to duplicate resources stored in the System file.

The following resources are present in a System file on the Macintosh System disk or a *Write/Paint* disk.

- Icons used in System dialog and alert boxes.
- Templates that describe the contents of some dialog and alert boxes.
- Identities of fonts that can't be removed.
- Pictures used in the Control Panel and Alarm Clock desk accessories.
- Standard patterns for the desktop pattern and every new *MacPaint* document.
- The pattern used in the scroll bar elevator.
- The current desktop pattern.
- Four pointer shapes: the I-beam text pointer, the cross, the wristwatch, and the thick cross.
- Assorted bits and pieces of text, such as “Note Pad File” and “Version 1.1 24-Apr-84.”
- Programming that converts a number from its internal form (binary) to a form that can be displayed or printed (ASCII), and vice versa.



System Resources

The Resource Mover is a program development tool that lets you examine and edit the resources contained in the files on disk. Each resource has unique attributes, such as an ID number and type specification. This info window shows the graphic elements and attributes that make up the Alarm Clock desk accessory, which resides in the System file.

- Programming that calculates transcendental math functions such as sine and logarithm.
- Programming that performs arithmetic on numbers with fractions, such as 34.82 (floating-point numbers).
- Programming that handles the Open, Save, and Save As commands from the File menu.
- Programming that initializes a disk.
- Programming for the desk accessories.
- Programming for the ⌘-Shift-3 and ⌘-Shift-4 screen snapshot features.

- Programming that constructs controls, such as scroll bars and buttons.
 - Words inside displayed buttons.
 - Programming that constructs pull-down menus.
 - Words displayed inside menus.
 - Programming that constructs the regular windows with square corners and striped title bars.
 - Programming that constructs desk-accessory-style windows with rounded corners and black title bars.
 - Programming for adapting the Mac to international locations, including alphabetizing rules, formatting dates and times, and punctuating numbers.


- Programming to drive the currently selected printer.
 - Programming to transfer the Control Panel settings from battery-powered memory to regular memory and to fix errors in the 64K ROM.
- Next to the Macintosh fonts, the desk accessories occupy the most disk space. The Scrapbook uses 2824 bytes (excluding clippings), the Alarm Clock uses 3392 bytes, the Note Pad uses 2418 bytes (excluding your notes), the Calculator 2444 bytes, Key Caps 1586 bytes, the Control Panel 4028 bytes, and the Puzzle 932 bytes.

All the desk accessories but one (any one) can be removed without adversely affecting the Mac. You can swap desk accessories using the program *Desk Accessory Mover* by Donald Brown, which does for desk accessories what the Font Mover does for fonts. The price

is \$15, payable on approval. Contact CE Software, 801 73rd St., Des Moines, IA 50312, 515/224-1995. None of the other resources in the System file is expendable.

Send your questions to Get Info, Macworld, 555 De Haro St., San Francisco, CA 94107. □

Lon Poole is a Contributing Editor of Macworld and the author of several computer books, including The Apple II Users Guide and MacWork/MacPlay.



Introducing MACWORLD

The Macintosh Magazine

**The Exciting New Magazine for
the World's Most Creative Personal
Computer—the *Macintosh***


**At Special Charter Subscriber Rates
Save Up to 54% Off the Newsstand Price***

(*when you subscribe for 3 years)

Personal computing took a giant leap into the future when Apple introduced the Macintosh. We've created *Macworld* as your passport into this incredible new realm of computing. Each issue we'll bring you everything you need to explore and get the most out of your Macintosh. From the latest product news to innovative business applications, from amazing graphics to personal productivity tools and games, each issue of *Macworld* will be packed with interesting, practical, readable information written by skilled, perceptive writers.

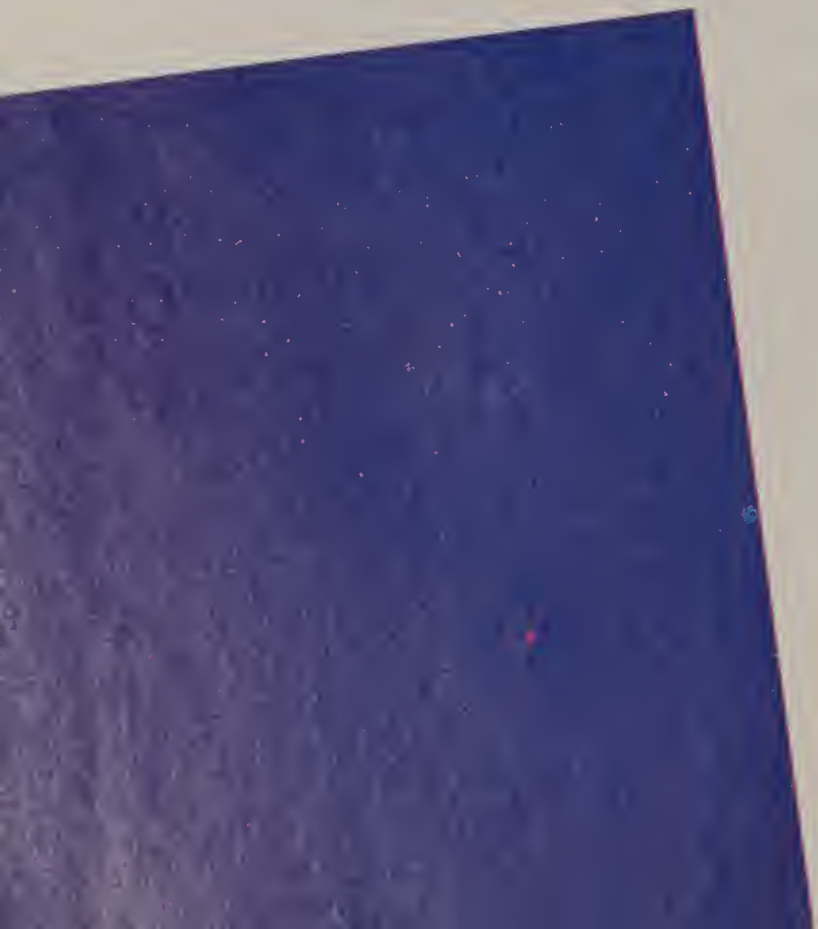
Each month we'll be creating a *Macworld* community; sharing ideas, problems, and creative solutions while we explore the world of Macintosh together.

So why take a chance on missing a single exciting issue? For a limited time only you can subscribe to *Macworld* at special Charter Subscriber rates of only

 **\$24 for 1 year (12 issues)**

That's a savings of 20% off the regular \$30 subscription rate and 50% off the newsstand price!

**And you can save even more by subscribing
for 2 or 3 years at Special Charter Rates. Don't
Wait...Subscribe Today and Save!**





Special Charter Subscription Offer

Save 50% off
the Newsstand Price!

~~\$48~~
Newsstand

~~\$30~~
Regular Subscription Rate

\$24
Special Charter
Offer

Order Now to Take
Advantage of This
Limited Time Offer!
VISA and MasterCard
Accepted! Call TOLL FREE:
800-247-5470
(in Iowa 800-532-1272)

Macworld was published in
May, July, and September 1984
and began monthly
publication in November 1984.

YES! Please send me *Macworld*, the Macintosh magazine.

☐ Please Bill Me ☐ Payment Enclosed

Please Send Me: ☐ 12 issues/\$24 ☐ 24 issues/\$46 ☐ 36 issues/\$66

Name _____

Company _____

Address _____

City, State, Zip _____

Please allow 6 to 8 weeks for delivery of your first issue. Outside the U.S. subscriptions must be prepaid in U.S. funds. Outside the U.S. and Canada, rates are \$36/year for surface mail and \$84/year for airmail. Offer expires September 30, 1985. JM2067

YES! Please send me *Macworld*, the Macintosh magazine.

☐ Please Bill Me ☐ Payment Enclosed

Please Send Me: ☐ 12 issues/\$24 ☐ 24 issues/\$46 ☐ 36 issues/\$66

Name _____

Company _____

Address _____

City, State, Zip _____

Please allow 6 to 8 weeks for delivery of your first issue. Outside the U.S. subscriptions must be prepaid in U.S. funds. Outside the U.S. and Canada, rates are \$36/year for surface mail and \$84/year for airmail. Offer expires September 30, 1985. JM2067

YES! Please send me *Macworld*, the Macintosh magazine.

☐ Please Bill Me ☐ Payment Enclosed

Please Send Me: ☐ 12 issues/\$24 ☐ 24 issues/\$46 ☐ 36 issues/\$66

Name _____

Company _____

Address _____

City, State, Zip _____

Please allow 6 to 8 weeks for delivery of your first issue. Outside the U.S. subscriptions must be prepaid in U.S. funds. Outside the U.S. and Canada, rates are \$36/year for surface mail and \$84/year for airmail. Offer expires September 30, 1985. JM2067



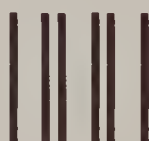
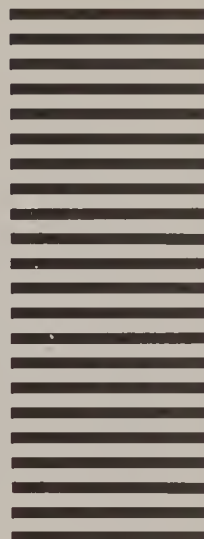
NO POSTAGE
NECESSARY
IF MAILED IN
UNITED STATES

BUSINESS REPLY CARD

FIRST CLASS PERMIT NO. 79 BERGENFIELD, NJ

POSTAGE WILL BE PAID BY ADDRESSEE

Macworld
Subscription Department
P.O. Box 20300
Bergenfield, New Jersey 07621



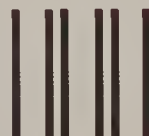
NO POSTAGE
NECESSARY
IF MAILED IN
UNITED STATES

BUSINESS REPLY CARD

FIRST CLASS PERMIT NO. 79 BERGENFIELD, NJ

POSTAGE WILL BE PAID BY ADDRESSEE

Macworld
Subscription Department
P.O. Box 20300
Bergenfield, New Jersey 07621



NO POSTAGE
NECESSARY
IF MAILED IN
UNITED STATES

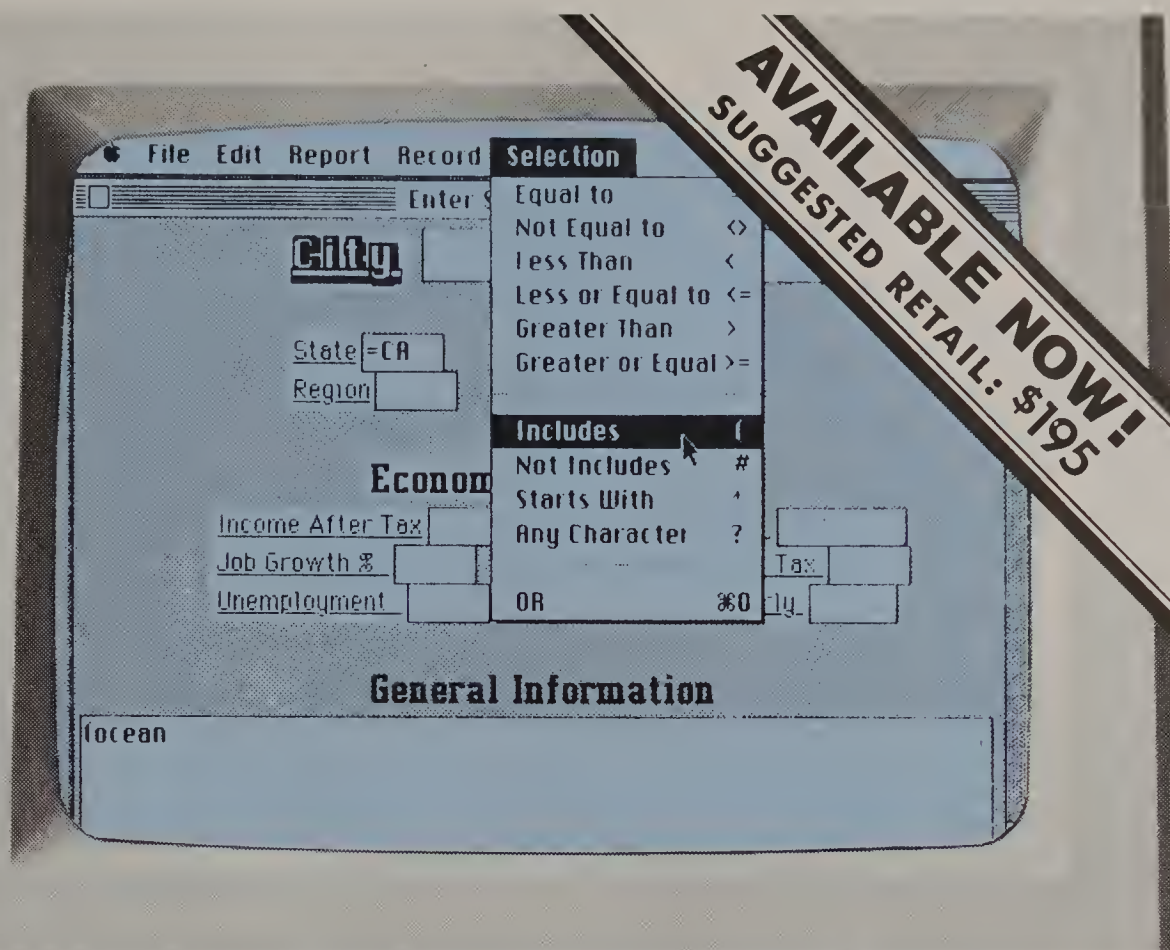
BUSINESS REPLY CARD

FIRST CLASS PERMIT NO. 79 BERGENFIELD, NJ

POSTAGE WILL BE PAID BY ADDRESSEE

Macworld
Subscription Department
P.O. Box 20300
Bergenfield, New Jersey 07621





DB Master Macintosh

Performance and power in the palm of your hand

DB Master Macintosh is for anyone who needs to store, organize, retrieve or reproduce information. And if you know how to use your Mac, you already know how to use DB Master Macintosh!

Information Management - Macintosh Style!

Want a database that really uses Mac's innovative features? Point. Click. Type. That's how easy it is to design a form with DB Master™ Macintosh™. Place information anywhere on the screen. Vary font styles and sizes. Design reports with exactly the information you need. In any order, anywhere you desire.

Performance - Your Style!

With DB Master Macintosh, there's no disk swapping for files up to 200K on a single-drive Mac. You can enter long blocks of text—up to 3,000 characters. Compute complex formulas. Make very precise searches using up to 20 different criteria. And your reports can be used with MacWrite™ or other Macintosh programs.

Capacity you'll never outgrow

Only DB Master lets your information expand beyond a single disk. To another. And another. Up to 44 disks or 20 megabytes on hard disk.

Call now for a spec sheet and the name of a dealer near you. (415) 457-1656

STONEWARE®

STONEWARE, INCORPORATED • 50 BELVEDERE STREET • SAN RAFAEL, CA 94901

Trademarks: Stoneware (Stoneware, Incorporated) • DB Master (DB Master Associates) • Macintosh and MacWrite (Apple Computer, Incorporated)

Circle 100 on reader service card

CUT TO THE CORE QUICKER WITH MAC-BARCODE.



Introducing Mac-Barcode.TM Label-generating software for the Apple[®] Macintosh.TM

In minutes, you can transform an Apple Macintosh into a complete, low-cost bar code workstation. With Mac-Barcode, a new label-generating software

package from Computer Identics.

It generates bar code labels and documents, according to specification and style, that meet the requirements of a number of industries: automotive, health care, food processing and packaging, as well as the U.S. Department of Defense's LOGMARS program. Labels and documents can be produced on-the-spot using Apple's Imagewriter printer.

Mac-Barcode puts you in touch with the unsurpassed benefits of bar code data entry: speed, accuracy and reliability. A technology that

is three million times more reliable than keyboard data entry and 300 times more reliable than Optical Character Recognition (OCR).

When used with the SCANSTAR-Mac, a CI scan/decoding unit, Mac-Barcode offers an easier, more efficient means of monitoring inventory control, filing, work-in-process tracking, point-of-sale operations, security, and training. The immediate result: you have complete control over on-site printing of labels and documents that integrate text, graphics and coded information.

Additional features of the Mac-Barcode program include the use of the familiar "mouse," ICONS, and pull-down menus that make the Macintosh so easy to use.

Twelve years of CI bar code technology have been integrated into Mac-Barcode. This technology puts more bite into your Macintosh.

For more information, call our toll-free number today—1-800-MAC-CODE.



**computer
identics**

The Bar Code Company

5 Shawmut Road, Canton, MA 02021
Tel. (617) 821-0830 • TWX 710-348-0828

Apple and the Apple logo are registered trademarks of Apple Computer, Inc. Macintosh is a trademark licensed to Apple Computer, Inc.

Circle 89 on reader service card

Make Your Macintosh the Master of Ceremonies



TRIVIA FOR THE MACINTOSH™

Entertainment Software from Mirage Concepts

Over 5000 TRIVIA questions and answers are packed into this dynamic new application of the world's most popular parlor game. With TRIVIA by Mirage Concepts, your Macintosh becomes quiz master, score keeper and final authority...the perfect master of ceremonies for your next party.

Available Now...at Apple Dealers and Software Stores Nationwide for Just \$49.95

PROGRAM HIGHLIGHTS

- Over 5,000 Questions and Answers
- 5 Categories — 3 Difficulty Levels
- Special "Genius" Section
- Variable Length Game
- Use of Macintosh "Mouse" for Ease of Operation
- Screen Clock to Time Answers
- Store Incomplete Games for Future Play

For Information

(800) 641-1441
In California, Call:
(800) 641-1442



A Product of

Mirage Concepts, Inc.

4055 W. Shaw, #108 • Fresno, CA 93711 • Ph. (209) 227-8369

TM: Macintosh is a trademark of Apple Computer, Inc.

Circle 70 on reader service card

Macworld Art Contest

Macworld and Apple Computer are sponsoring an art contest for *MacPaint* artists. Each month we will award a first prize of \$500 and two runner-up prizes of \$250 for original artwork created with *MacPaint*. A committee of five judges—members of *Macworld*'s editorial and art departments, as well as Susan Kare, Apple's resident artist—will view the entries and select the winners. Gallery exhibitors who do not win a prize will receive the standard \$25 payment for each drawing used.

Once a year the first-place entries from each issue will again be judged, and a grand prize of \$5000 and two runner-up prizes of \$2500 will be awarded. The first grand prize will be announced in the November 1985 issue of *Macworld*.

To enter the contest, send a paper copy of your artwork and a detailed description of the techniques you used to create it to *Macworld Gallery*, 555 De Haro St., San Francisco, CA 94107. Please include your address and phone number with each submission. If your drawing is selected, we will ask you to send a copy of it on disk. All disks become the property of *Macworld*.

The art contest is co-sponsored by Macworld magazine and Apple Computer, Inc. Employees of CW Communications and Apple Computer and their families may not enter the contest. Winning drawings become the property of Apple Computer.

Last Year Over 20,000 Americans Were Committed To Asylum.



Once people enter *Asylum*TM, they don't *want* to leave. And neither will you.

Inside this thrilling adventure game from ScreenplayTM challenges lie around every corner, behind every door. There are hundreds of doors, too!

You've gone crazy from playing too many adventure games. You've been placed in the asylum to act out your delusions. To cure yourself, you must make good your escape.

There's no one you can turn to for help. Almost every turn leads to a dead end. Or worse, vigilant guards stand in your way. If you can't outmuscle them, can you outthink them? Inmates line hallways offering help.

Asylum runs in 48K on the Atari, Commodore 64 Macintosh and IBM PC computers. See your local software dealer.

But can they be trusted?

While getting out of the asylum may take months, you'll get into our game instantly.

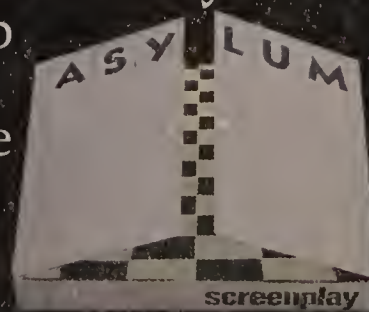
Smooth scrolling three dimensional graphics give you a very eerie sense of reality. This feeling is also heightened by the use of

full sentence commands.

No wonder thousands of people bought *Asylum*TM last year, and *PC World* recently named *Asylum*TM one of the top ten games for the IBM PC.

Play *Asylum*TM. All you have to be committed to is fun.

screenplayTM



Box 566, Minden, NV 89423 800-334-5470, 702-782-9731

Shifting into Overdrive

Danny Goodman



In many of life's routine acts, misfortune lies hidden. If you play *Monopoly*, you eventually draw the card that tells you to go to jail. If you drive a car, some day you're certain to reach for your keys and realize you've locked them in the car. If you work with the Macintosh, an alert box occasionally appears and informs you that the disk you're using is full or almost full (see Figure 1).

You probably see the "disk full" message most often when you're adding details to a *MacPaint* document and less than 20K of storage space remains on the disk. The message



also shows up when you attempt to print a *MacWrite* document and there isn't enough space left on the disk for the program to copy the document for printing. The root of this storage space problem is that so much of a 400K floppy disk is taken up by the System Folder and an application program that little space remains for document storage. Storing documents on a separate disk helps, but then you have to contend with the inconvenience of swapping disks several times to load or save documents during a work session.



Three hard disk drives available for the Macintosh are the Davong Mac Disk, the Tecmar MacDrive, and the Corvus OmniDrive. Although each of these drives is easy to set up, you

may have trouble finding room for one on your desktop. However, the electronic storage space you gain will be worth the physical storage space you lose.

For most people, purchasing a second disk drive solves the storage problems encountered with a single drive (see "Double-Disk Strategies," November). But you may be tempted instead by a high-capacity hard disk whose maximum storage space is measured not in thousands of bytes but in millions—megabytes. Hard disks offer the advantages of speed and vast storage capacity, but they are expensive. In determining how much storage space and speed you need, it's important to understand the powers and limitations of the current state of the art in Macintosh hard disk systems. To show you what to expect, I put three hard disk drives through their paces. These were prerelease versions of the Davong Mac Disk and Corvus OmniDrive, and a production sample of the Tecmar MacDrive removable-cartridge hard disk system.

The Drive's Hard Heart

Hard disks, also called fixed disks or Winchester disks (the Winchester was IBM's first commercial hard disk for mainframe computers), get their name from the actual disks on which computer information is stored. The heart of the drive is a hard metal platter coated with a fine metallic oxide. Unlike the magnetic surface of a floppy disk, the surface of a hard disk never comes in contact with the disk drive's read/write head. The constant, rapid revolution of the disk creates a cushion of air on which the head "floats." A hard disk is so precise an instrument that the intrusion of a single dust particle can prove disastrous. To prevent disasters, most hard disks are sealed against outside impurities. For this precision, however, you can expect to pay at least \$2000.

The principal advantage of a hard disk is that it stores more information than a floppy disk. A typical hard disk is capable of storing 10 megabytes—as much as 25 floppy disks. A hard disk might be invaluable, for



example, to an attorney who maintains ongoing correspondences with many clients, law firms, and agencies. If the attorney wants to retrace the history of a correspondence or compare a number of letters, a hard disk can store all the information in one place, and the attorney can simply switch among items without juggling floppy disks.

Other than enormous storage capacity, it is worth asking what you gain from a hard disk drive that you don't get with a second floppy disk drive, which costs one-fourth as much. One of the hard disk drive's advantages over a floppy disk drive is that it transfers information between disk and computer many times faster. Any time you perform operations such as opening, saving, or quitting a program or a document, you have to wait for the Mac to shuttle information between its internal memory and a storage device. With

the hard disk spinning at 3600 revolutions per minute (rpm), the magnetic head has access to more information in less time than a floppy disk, which rotates at only 390 to 605 rpm.

The hard disk's speed helps you save time and keep your train of thought while you change between application programs. Say you want to insert several bar graphs from *Microsoft Chart* into a *MacWrite* report for a sales forecast meeting. With a floppy disk, every time you try to cut and paste a graph into the final document, you twiddle your thumbs while you watch the mouse pointer appear as a wristwatch. A hard disk greatly reduces the waiting period.

Sizing Up the Drives

When you look at the Davong, Corvus, and Tecmar hard disk drives, you may notice that they are almost as big as the Macintosh itself. To save desk space, any of the drives can be placed beneath the Mac like a pedestal or mounted on a shelf or the floor if there is adequate ventilation.

Unlike the Davong and Corvus nonremovable disks, the Tecmar system features a removable 5-megabyte (M) hard disk cartridge. Tecmar also offers other hard disk configurations, including a 10M nonremovable disk and a system that combines a 5M cartridge with either a 10M nonremovable disk or a second 5M cartridge drive. You can keep as many cartridges on hand as you need for storage, so you won't fill up the finite space of a nonremovable hard disk system.

The Mac Disk from Davong comes in five capacities, ranging from 10 to 40 megabytes. Since the Mac's Finder currently limits hard disk storage to 16M, only the 10M and 15M systems can be used efficiently. To address this limitation, Davong is designing utilities to partition the hard disk into multiple volumes. Corvus includes partitioning software with its four OmniDrive models (5M, 11M, 16M, and 45M) so that even the 5M drive is divided into four distinct storage areas of 1269K each.

All three drives are easy to set up, and each comes preformatted. Setting up the Mac Disk and OmniDrive requires connecting the cable (supplied by the manufacturer) between the rear of the hard disk unit and the Mac's telecommunications port, and plugging the drive into an AC power outlet. The MacDrive also connects to the Mac's telecommunications port, but it

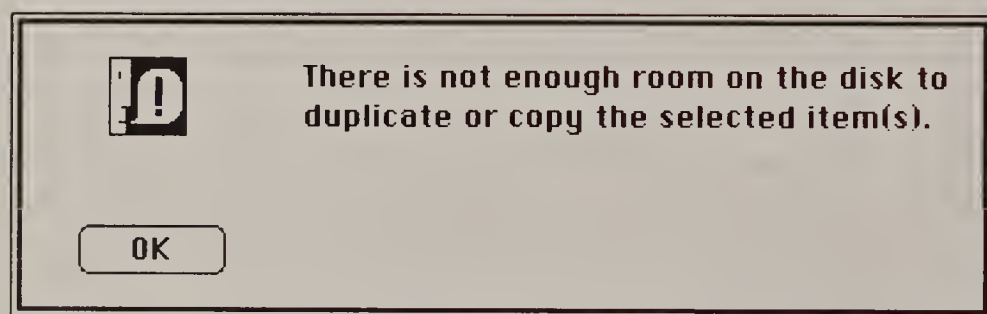


Figure 1

Seeing the "disk almost full" alert box is a good reason to investigate additional disk drive options, including hard disk systems.

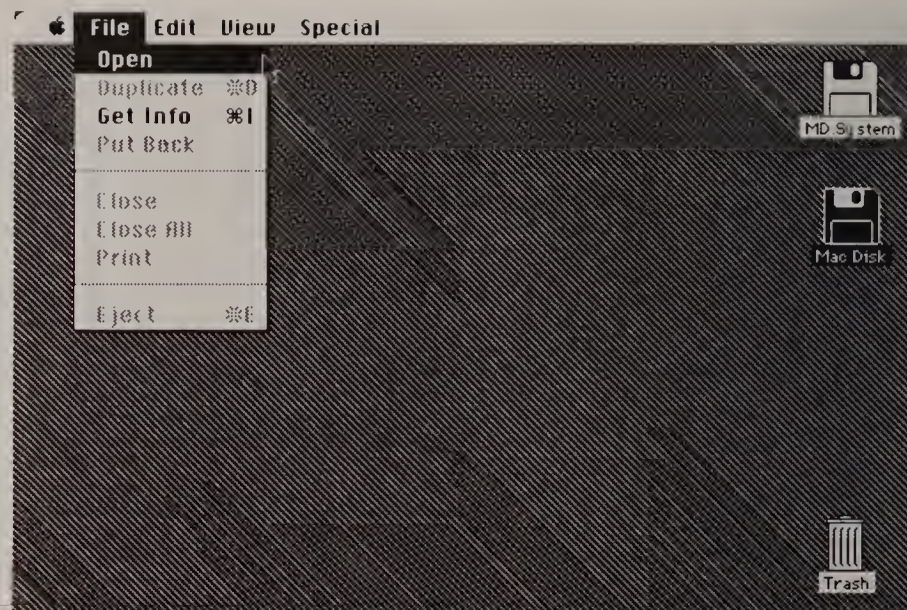


Figure 2

The system disk icon appears on the Mac's screen after you turn on the hard disk and start the Mac with the special system disk. Soon thereafter, the hard disk icon appears. To transfer control of the Finder, you must first open the hard disk icon.

has the AC power receptacle on its rear panel. Since you can plug the Mac into the receptacle, you can turn both the computer and the hard disk drive on or off at once using the one power switch on the MacDrive. This combination also lets you power both units through only one AC wall outlet.

One drawback to the hard disk drives is that each must be attached to the Mac's telecommunications port. With a hard disk connected to one serial port, you have only one port left for attaching the Mac to other hardware, such as a modem or a printer. Tecmar and Davong both plan to include an extra serial port on the rear panels of their hard disk systems. If you plan to buy one of these systems, however, verify that the serial port has been added; otherwise, you have to switch cables manually when you want to change hardware devices.

Starting Up

Although the hard disk drives are easy to set up and don't require software installation, you can't start up the Mac from a hard disk. Every time you want to start the hard disk, you have to start the Mac with a special floppy disk, provided by the manufacturer, that contains a customized System file. If you've already started the Mac with a disk that has a regular System file, you must restart with a customized disk to use the hard disk. The customized System file replaces the Mac's System file, which can't recognize a hard disk drive connected to either of the Mac's serial ports.

After you've started the hard disk and inserted the special system disk, it takes about twice as long for the Mac to get going with a hard disk drive as it takes with the Mac's floppy disk drive. Because you use a hard disk to make your work more productive, it makes

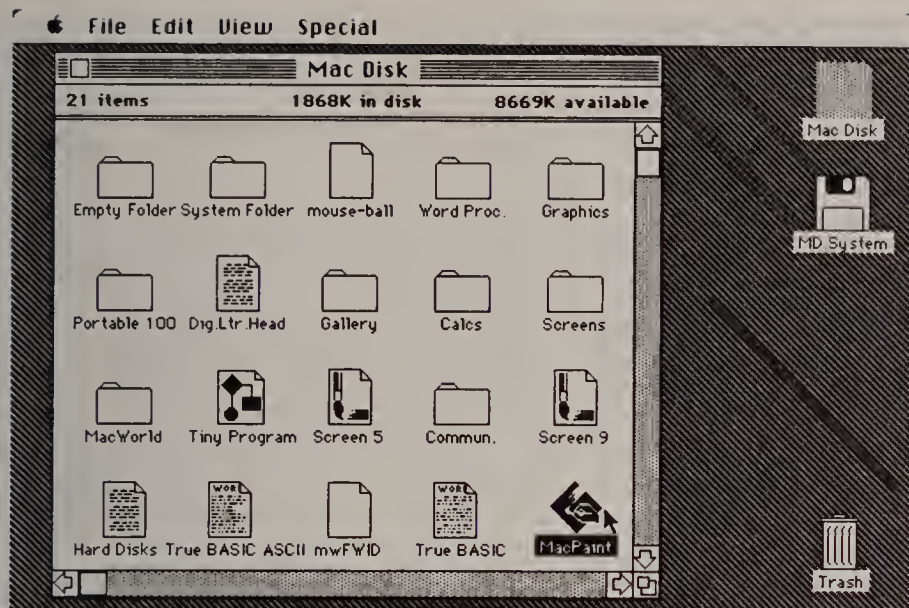


Figure 3

To complete transferring control of the Finder, you must open an application such as MacPaint from the disk window.

sense to start the drive in the morning and leave the computer on all day. Once you see the hard disk icon on the screen, you open the icon and then open an application from the hard disk before you can eject the system floppy disk (see Figures 2 and 3). By opening the application, you transfer control of the Finder to the hard disk. At this point, you can eject the system disk and use the Mac's internal drive for transferring programs or documents between the floppy and hard disks (or you can use the floppy disk drive by itself, as if the hard disk weren't there). If you aren't using the floppy disk, it is a good idea to eject it from the drive; otherwise, the Finder will waste time reading the file directory of the internal drive when you quit an application.

Working with the hard disk and internal drive on the desktop is like working with two floppy drives—although one drive is obviously larger. You transfer programs and documents to and from hard disks in the same way that you transfer them between floppy disks—you drag an icon from the source disk to the destination disk. Like an external floppy disk drive, a hard disk drive greatly reduces disk juggling.

The Corvus drive, with its ability to partition the disk space into volumes, differs from the Davong and Tecmar drives because you must go through a program called the *Mount Manager* to select the one or two hard disk volumes that can be active at once. You must remember, however, to have a System file and *Mount Manager* in at least one volume on the desktop. Remembering which volume holds the *Mount Manager* can be confusing until you practice for a while.

Davong and Tecmar recommend different procedures for turning off the Mac and the hard disk drive. For the Davong system, make sure you haven't used the hard disk for at least 10 seconds before you turn the drive off. This gives the disk drive's magnetic head time to set itself in an unused portion of the disk, which helps prevent damage if the unit is handled roughly.

For the Tecmar drive, the documentation advises you to go through the same ejection procedure used for floppy disks when you turn the drive off. Unfortunately, on the system I tested (Tecmar system disk software version 1.00), the Mac usually presented an alert box warning that not enough memory remained to eject the disk (see Figure 4). In practice I was able to turn off the MacDrive and the Mac without losing data. Nevertheless, a cloud of doubt hung over the close of each session.

Although the OmniDrive manual lacks specific instructions for winding up a hard disk work session, the unit seems forgiving. I tried turning it off with volumes and windows open and still did not lose any data.

Hard and Fast

The real test of hard disks is whether they improve your productivity with the Macintosh. Your first impression in working with any of these drives is how much faster a hard disk stores and retrieves information than a floppy disk. If you placed the three hard disks in a race, they'd finish Davong, Corvus, and Tecmar.

I tested opening, saving, quitting, and duplicating *MacPaint* and *MacWrite* documents, and the Davong drive was usually about twice as fast as the Tecmar product and was always at least 25 percent faster. The Corvus drive generally performed in between the other two. Opening *MacPaint* with the Mac Disk took 7.8 seconds compared to 11.4 seconds for the OmniDrive, 13.5 seconds for the MacDrive, and 21.9 seconds for the Mac's internal floppy disk drive. The Tecmar hard disk drive was approximately twice as fast at opening and saving files as the Mac's internal disk drive, but about 20 percent slower than a floppy disk drive when quitting *MacWrite* or *MacPaint*. Quitting *MacWrite* took the Davong 8.9 seconds compared to 19.3 seconds for the Tecmar, 14.8 seconds for the floppy disk, and 10.1 seconds for the Corvus drive.

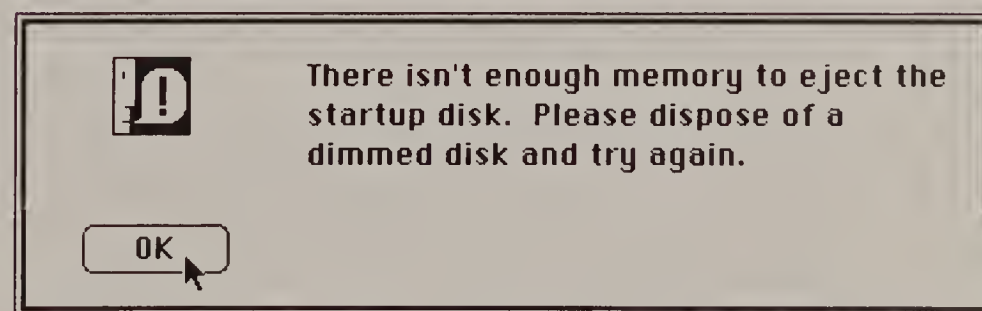


Figure 4

Although the Tecmar manual urges you to "eject" the hard disk at the end of a session as you would a floppy disk, an alert box warns that it cannot be done because of memory limitations. I never lost data, however, by ignoring this alert box and turning off the MacDrive.

Finding Room

After increased speed, you're most likely to notice that the storage space on a hard disk seems enormous. Even after transferring all your programs and documents to the hard disk, you'll probably find many thousands of kilobytes still remaining for your work. Having all this space, of course, essentially eliminates the possibility of getting the "disk almost full" alert box.

The amount of free storage space, however, is not as large as is specified in the disk window. Due primarily to limitations in the file management capabilities of Finder version 1.1, the Mac can track only about 100 to 150 programs or documents (only about a month's output of five letters each business day) on a hard or floppy disk directory. To help mask this limitation, both the Davong and Tecmar systems assign disk space in large chunks, even for the smallest files. If you store a 100-byte file on the Tecmar cartridge, for example, a glance at the Get Info dialog box reveals that this tiny file accounts for 10K of disk space. The same file on the Davong hard disk takes up 20K (see Figure 5). Therefore, the 10M hard disk may not store a full 10 megabytes of programs and documents if your files are not in the precise size increments. You're likely to run out of directory space before storage space until Apple updates the Finder again to control a greater number of files on a disk.

Because the Corvus hard disk drive lets you partition space into smaller units than the other drives, it assigns disk space in smaller, 4K chunks. Partitioning in this way allows you to store more data and a larger number of files on the entire disk. I encountered some difficulty, however, in copying several dozen documents to a Corvus volume. The volume wouldn't accept more than 749K, and each new document I copied or created erased a document previously stored on the volume.

One of the hazards of computing with a hard disk is that with so much storage space your Mac desktop can become disordered. You should establish a work plan that includes placing associated programs and documents in readily identifiable folders. With the Mac's current Finder, however, the more you organize your documents into folders, the fewer actual documents you can store on a hard disk—as few as 90. This situation creates a paradox: the more documents you have, the greater the need for folder organization; yet the more folders you have, the fewer documents the directory can hold. If you want to conserve folders, you can isolate key application programs for ready identification by dragging them outside the disk window (see Figure 6).

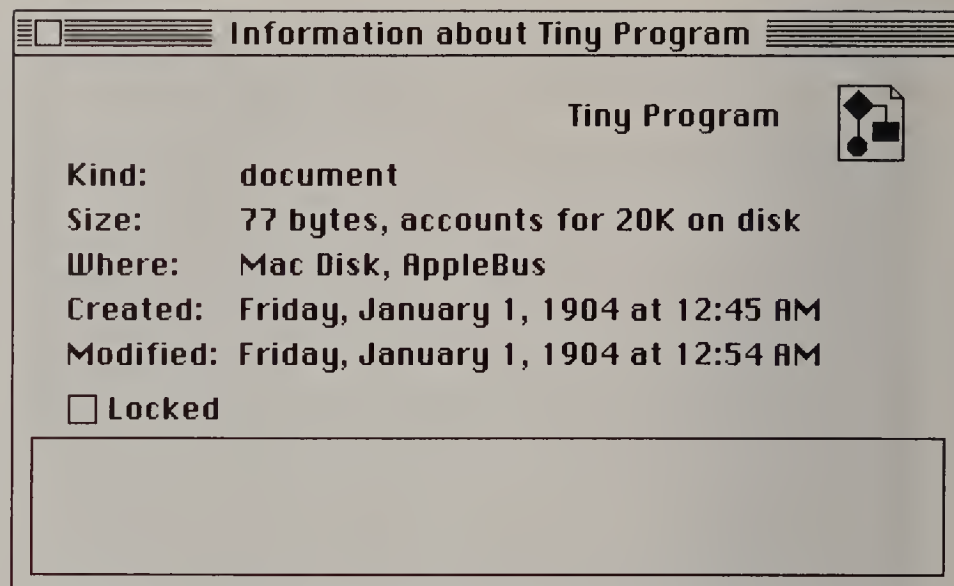


Figure 5

The Get Info dialog box shows that the hard disk assigns unnecessarily large portions of memory to each file, regardless of the actual amount of data being stored. This example shows that the Mac Disk apportions 20 kilobytes of storage for a file only 77 bytes long. The Tecmar MacDrive assigns 10K of disk space, and the Corvus OmniDrive uses 4K. In contrast, the file takes up only 1K on a floppy disk.

When file directories reach capacity, all three hard disk systems seem to strain the 128K Mac's memory. Although this imposition on memory does not affect the maximum size of a *MacWrite* document, the Clipboard area of memory appears to be severely restricted. In the tests I ran, cutting and copying operations were limited to blocks no larger than two *MacWrite* pages. When I tried these operations with larger blocks, I got an alert box indicating inadequate memory.

The "out of memory" alert box also appears when you try to use the Font Mover program to add fonts to the hard disk System file (see Figure 7). The appearance of the alert box makes it impossible to use the Font Mover with any of these hard disks. If you want to change any fonts stored on the hard disk, you must change the fonts on the hard disk's special system floppy disk. You can then start up the hard disk and copy the System file from the system disk to the hard disk.

The Perils of Copy Protection

Copy-protected programs pose serious problems for hard disk owners. Depending on the software manufacturer's policy, copy-protected programs may not be transferable to a hard disk. Other programs may require you to load floppy disks before you can use them.

One copy-protected program, *Microsoft Multiplan* (version 1.02), presents a problem for the Tecmar cartridge disk. When you make a working copy of *Multiplan* on a floppy disk and try to start the program from that disk, the working copy is ejected. A dialog box then appears asking you to insert the original



Figure 6

Hard disk desktops look like floppy disk desktops except for the huge storage space on the disk. This MacDrive sample desktop shows that 2529K of storage capacity remains available even though 2498K has already been used. Notice that many documents have been organized into folders. Also, two applications and a letterhead document have been dragged out of the window next to the disk icons for quick identification and opening.

master disk to verify that you have the authorized copy as well. Unfortunately, when you copy *Multiplan* to the MacDrive and try to start the program from the copy, the system software performs the equivalent of ejecting the hard disk (although no physical ejection takes place) and asks for the *Multiplan* Master. At this point, however, the computer is frozen. Inserting the *Multiplan* Master into the Mac's internal drive does nothing, and there is no way to cancel the dialog box. Until a new version of *Multiplan* becomes available, you can't use the program with the Tecmar drive.

Microsoft product developers claim that they have begun adjusting their software so that the Tecmar hard disk ejects floppy disks in the internal drive. If *Multiplan* is revised again, it should also include the Tecmar adjustment. The Davong system correctly ejects the floppy disk in the internal drive and asks that the *Multiplan* Master be inserted there.

The Corvus documentation advises you not to attempt to copy *Multiplan* to the OmniDrive (it behaves just like the Tecmar drive). Moreover, the manual recommends that you restart the Mac and hard disk after using *Multiplan*. Failure to do so causes the menu and menu bar font to change from Chicago to Monaco. The necessity of restarting the Mac is a dilemma if you plan to transfer spreadsheet selections to a *MacWrite* document, because the Clipboard is not carried over to *MacWrite*.

Hard Choices

A hard disk drive can improve your productivity by combining the advantages of large storage capacity with speed in moving between several applications and documents. But if your work doesn't regularly require shifting among applications or documents, an external floppy disk drive should meet your needs at considerably less expense. When you add a hard disk (at \$2000 and up) to the \$2195 Mac, you enter the price range of the Lisa 2/5 (which includes an external 5M hard disk) and the Lisa 2/10 (which includes an internal 10M hard disk), both of which run not only Mac software but also a variety of other sophisticated programs. In this price range, unless you need the transportability of the Mac, your computing needs might be served more economically by the Lisa.

If you decide to add a hard disk drive to your Macintosh, your choice among the three drives depends on whether you most highly value speed, file capacity, or unlimited expansion. For speed, the Davong hard disk is currently the clear winner, because it most closely approximates the speed Mac owners might expect from a state-of-the-art personal computer. However, speed deficiencies in hard disks almost always result from the accompanying software, not the hardware. Since Tecmar plans to release upgraded software in the near future, the speed of the Tecmar drive may eventually equal that of the Davong drive.

The Corvus software best circumvents the limitations in directory space imposed by the Finder. Dividing the OmniDrive into volumes, as the software does, also helps you organize your storage.

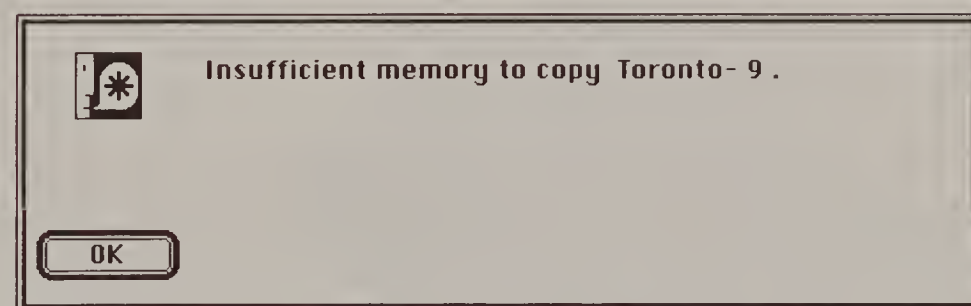



Figure 7

Whenever you attempt to add files using the Font Mover with a hard disk drive, you receive an alert box informing you that there is insufficient memory for the operation.

Although the 10M Davong hard disk offers twice as much storage capacity when you first purchase the drive, the Tecmar drive is ultimately the winner in the arena of storage expansion, because you can always add extra 5M cartridges for about \$125 each. Having both the Mac and the hard disk operate from one power switch and one outlet is another convenient feature of the Tecmar drive.

One quality of the Tecmar drive proved annoying during the testing. When you use the MacDrive, the horizontal movement of the mouse slows substantially. Instead of swinging the pointer across an entire *MacWrite* or *MacPaint* window with one flick of the wrist, you have to use a more deliberate action—and larger physical desk space—to accomplish the same move. (Tecmar says that version 1.01 of the MacDrive software has corrected this problem.)

 *Your choice among the three drives depends on whether you most highly value speed, file capacity, or unlimited expansion.*

The Davong software has a desktop quirk of its own—a desktop pattern made up of diagonal lines. Even if you reset the pattern through the Control Panel desk accessory, the diagonal lines reappear the next time you start up the hard disk.

You should regularly back up your hard disk documents onto floppy disks. Davong and Corvus both plan to offer a program that backs up files onto floppy disks and restores documents to the hard disk in the event of hard disk failure. (These programs were unavailable for testing with the prerelease versions of the Mac Disk and the OmniDrive.) I know of no such software for the MacDrive, so you'll have to keep a close eye on your backup procedures if you own one.

All in all, the first marriage of the Macintosh to a hard disk is not without problems. It's as if the two partners haven't spent enough time together to learn their respective idiosyncracies. Eventually, the Mac Finder will probably allow more files to be addressed and more documents to be stored on both drives. And the 512K Mac should clear up the limited-memory problems noted. As Apple and hard disk makers learn more about the way the Mac works with a hard disk, the two parties will gradually solve their problems and make the marriage work. □

▲▲▲▲▲▲▲▲▲▲ *Danny Goodman is a Contributing Editor of Macworld. He is the author of SuperMac, forthcoming from Simon & Schuster, as well as several other personal computing books. He also writes articles on computers and electronics for general-interest magazines.*

▲▲▲▲▲▲▲▲▲▲

Mac Disk
Davong Systems, Inc.
217 Humboldt Ct.
Sunnyvale, CA 94089
408/734-4900
List price: 10M system \$2395, 15M system \$2795

MacDrive
Tecmar Inc.
6225 Cochran Rd.
Solon, OH 44139-3377
216/349-0600
List price: 5M removable cartridge system or 10M nonremovable cartridge system \$1995, combination system \$3290

OmniDrive
Corvus Systems, Inc.
2100 Corvus Dr.
San Jose, CA 95124
408/559-7000
List price: 5M \$1995, 11M \$2495, 16M \$3195, 45M \$4995

SARGON III WILL RAISE YOUR CHESS GAME TO A HIGHER LEVEL.

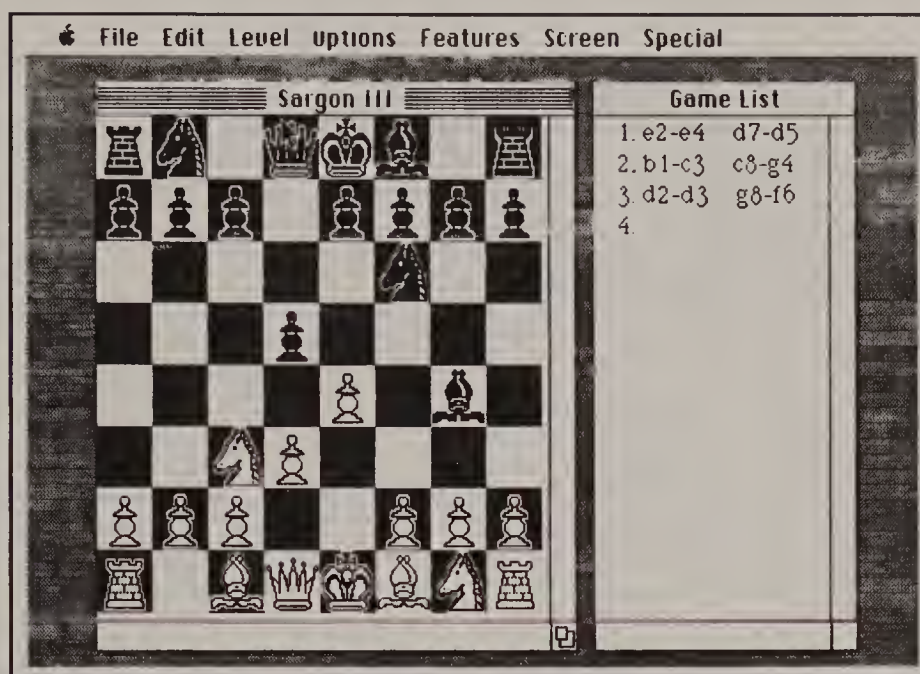
THE WORLD'S FINEST MICROCOMPUTER CHESS PROGRAM.

Use Sargon III as an opponent or as an instructor. Sargon III will play at any one of nine difficulty levels, from novice to expert. Ask Sargon III for a hint, take back a move you've already made, replay a sequence, change sides, or set up your own board for customized learning. Sargon III lets you study in detail more than 100 great games of history or review 45 classic chess problems, all on screen. Sargon III also includes a library of 68,000 opening moves.

SARGON III NOW AVAILABLE FOR MACINTOSH™

The intuitive operating style of the Macintosh perfectly complements the exquisite playability of Sargon III.

No need to type in your moves manually. Use the mouse to move your pieces. Pull-down menus make it easy to select the game's different options and features. With just a sweep and click of the mouse you can choose one of Sargon III's nine playing levels, change board size, save a game in progress to disk, or print out your game in high-quality Macintosh graphics.



SARGON III WRITES CHESS HISTORY.

Hayden's Sargon programs have become the best-selling microcomputer chess programs ever. And for good reason.

In a tournament sanctioned by the U.S. Chess Federation, Sargon III beat a master rated 2209. That makes Sargon III the only microcomputer program ever to defeat a player at that level.

Software reviewers for computer publications consistently rank Sargon as the leading microcomputer chess program.

And in keeping with Sargon's tradition of excellence in chess, each year Hayden awards the prestigious

Sargon Cup to the winner of the U.S. Chess Federation's U.S. Open.

In addition to the Macintosh, Sargon III also operates on Apple™ II+, IIe, IIc, Commodore 64™, IBM PC™, PCjr™, and popular compatibles.

Sargon III. Only \$49.95. See your local software dealer, or contact Hayden Software, 600 Suffolk Street, Lowell, MA 01854, telephone 800-343-1218.

Apple and Macintosh are registered trademarks of Apple Computer Corporation. IBM PC and PCjr. are registered trademarks of International Business Machines, Inc. Commodore 64 is a registered trademark of Commodore Business Machines.

*HAYDEN.
AMERICA'S FIRST FAMILY
OF SOFTWARE.*



HAYDEN

MUSICWORKS™ BRINGS OUT THE MUSIC IN YOU.

WRITE THAT TOP 40 HIT YOU'VE ALWAYS DREAMED OF.

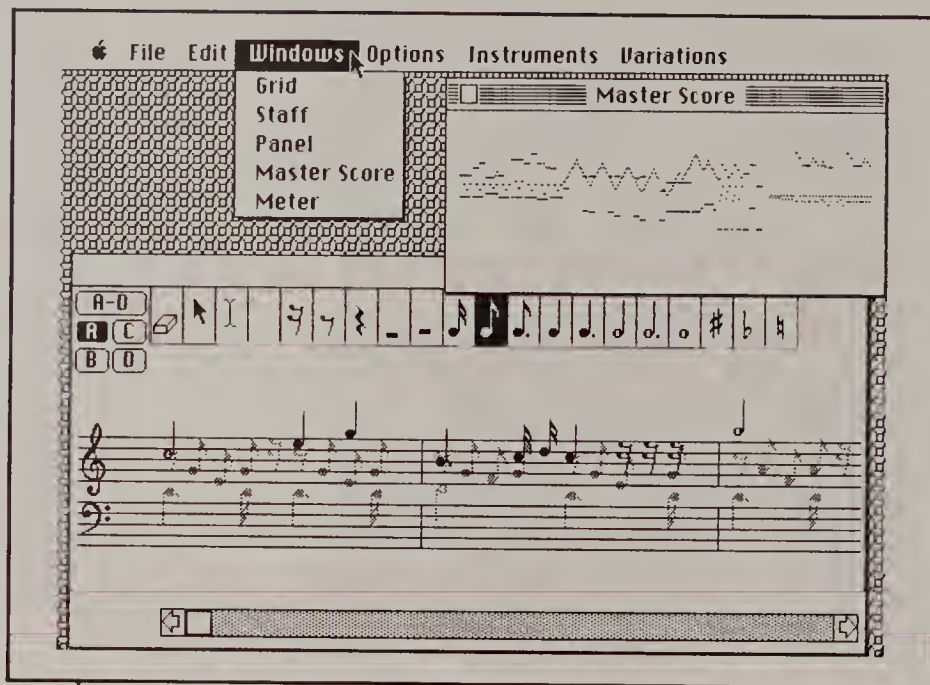
With MusicWorks you can compose music directly on your Macintosh™ and hear the results instantly.

Even if you can't read a note, you can easily use MusicWorks to produce professional musical scores. You compose on a seven-and-a-half octave grid that corresponds to the keys of a piano. Use your mouse to place "notes" on the grid. As you place them, you hear them. When you've got your song the way you want it, MusicWorks can transform your grid into a musical staff, insert the proper musical notation, and print it out in a professional format which any musician can follow.

If you already know musical notation, you can compose directly on a staff. Use the mouse to place your notes, to select the meter and key signatures, and to listen to your music instantly.

Either way, grid or staff, if you make a mistake or want to change something, simply erase and edit.

You can play back your whole



composition or any part of it whenever you want.

ORCHESTRATE 4 PARTS SIMULTANEOUSLY.

Choose any 4 instruments from out of a selection of 10. You've got piano, chimes, flute, trumpet, organ, even a synthesizer for that contemporary electronic sound.

You can hear all four instruments at once, or turn them off selectively so you can alter individual parts.

A LITTLE BACH IN EVERY BOX.

MusicWorks comes with templates which guide you through the instructional process

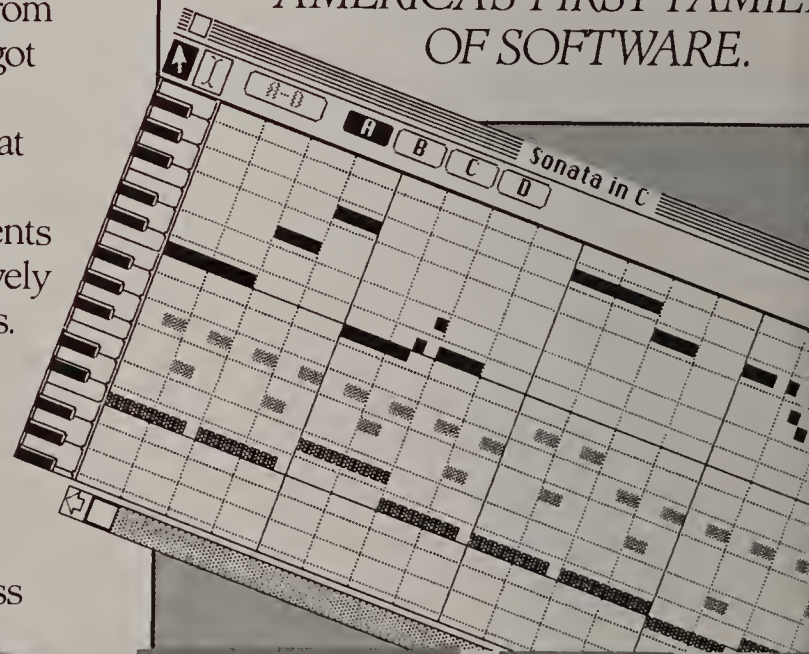
by playing classical and popular selections.

MusicWorks is part of the Hayden HeadStart Program which allows schools to accumulate points toward free computers, peripherals, and software. Buy MusicWorks, and your school will receive 50 HeadStart Points.

MusicWorks. Only \$79.95. Contact your local computer software dealer or Hayden Software, 600 Suffolk Street, Lowell, MA 01854, phone toll-free 800-343-1218.

Macintosh is a trademark of Apple Computer Corporation. MusicWorks is a trademark of MacroMind, as licensed exclusively by Hayden Software Company, Inc.

HAYDEN.
AMERICA'S FIRST FAMILY
OF SOFTWARE.



HAYDEN

TURN YOUR MOUSE, YOUR HOUSE, OR YOUR SPOUSE INTO A JIGSAW PUZZLE.

MASTERPIECES.™ HOURS OF FUN FOR JIGSAW LOVERS.

MasterPieces turns any MacPaint™ image into a jigsaw puzzle.

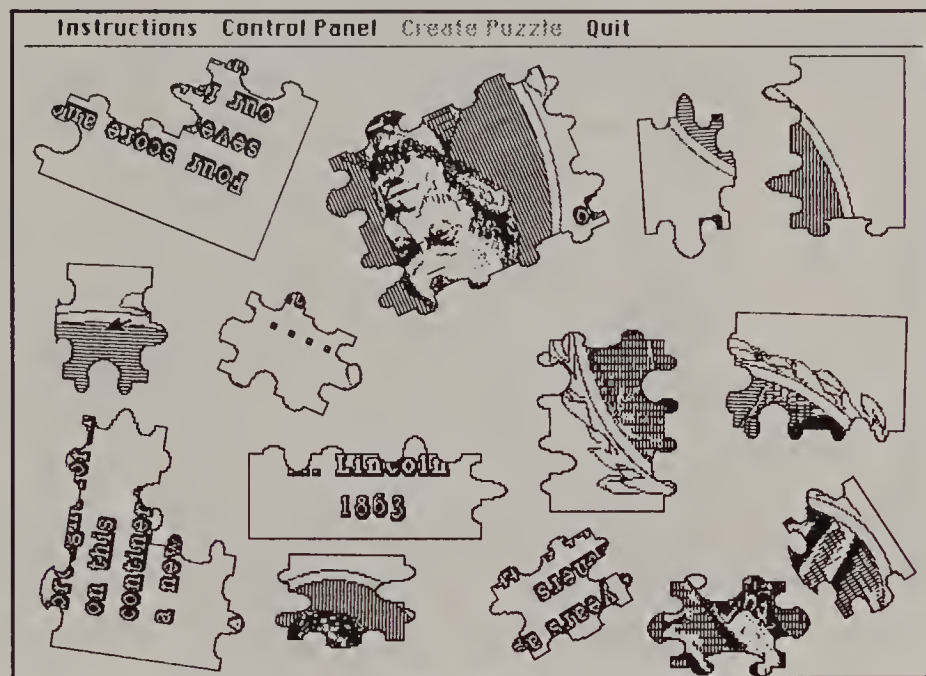
Here's how it works.

You put an image on your screen. Any one you want. Try one of the pictures that come with MasterPieces. Or use MacPaint™ or MacDraw™ to create an image of your own.

Next, select the number of pieces in your puzzle. You can have as few as 9 or, for a real challenge, as many as 196. Then pick from three levels of difficulty. This determines how close together you have to get your pieces before you get a fit.

Click your mouse, and your Macintosh automatically fragments your picture into the number of pieces you've selected, and then scatters those pieces around the screen.

Use your mouse to move the pieces and fit them together. No two puzzles are ever exactly alike. You'll have hours of fun



reassembling your own custom-made jigsaws.

If you have to leave before you're finished, you can store your partially completed puzzle and come back to it later.

If you want to quit altogether, you can have MasterPieces automatically reassemble the puzzle for you.

FUN AND EDUCATIONAL, TOO.

In addition to being an enjoyable pastime, MasterPieces also helps children develop better hand/eye coordination, develop their fine motor skills,

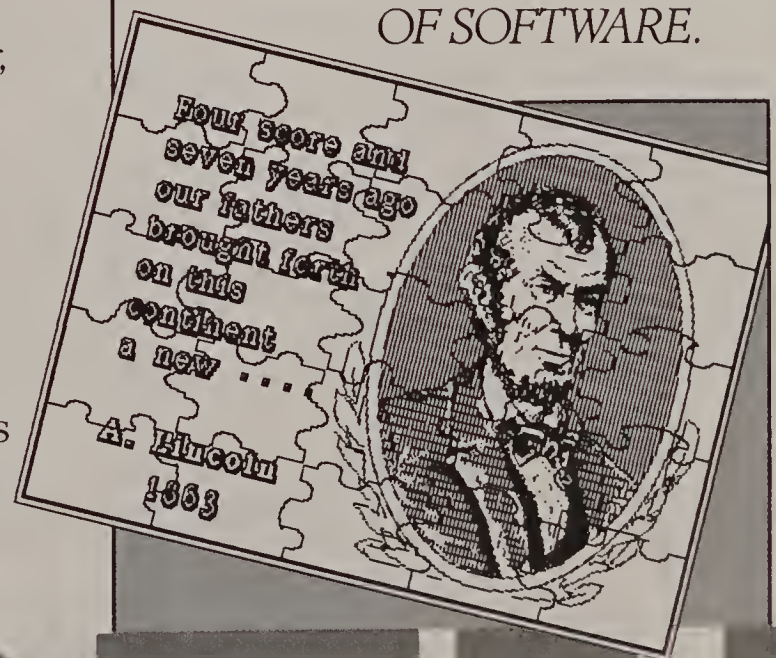
and visually discriminate shapes.

MasterPieces is part of the Hayden HeadStart Program which allows schools to accumulate points toward free computers, peripherals, and software. Buy MasterPieces, and your school will receive 50 HeadStart Points.

MasterPieces. Only \$39.95. Contact your local computer software dealer or Hayden Software, 600 Suffolk Street, Lowell, MA 01854, phone toll-free 800-343-1218.

Macintosh, MacPaint and MacDraw are trademarks of Apple Computer Corporation.
MasterPieces is a trademark of Hayden Software Company, Inc.

*HAYDEN.
AMERICA'S FIRST FAMILY
OF SOFTWARE.*



HAYDEN

BUILDINGS, LANDSCAPES, INTERIORS: DA VINCI™ HAS GRAND DESIGNS ON YOUR MAC.

NAIL DOWN YOUR DREAM HOUSE. ONLY \$49.95.

Hayden's three new daVinci graphics packages—Buildings, Landscapes and Interiors—let you use your Macintosh to design a house or an office, landscape it, and arrange the interior.

DaVinci works with your MacPaint™ program. Each daVinci package gives you hundreds of design selections. Use them as is, or alter them to suit your own ideas. Deletions or additions are no harder than a sweep and click of your mouse.

SEE THE FOREST OR THE TREES.

The daVinci packages cost only \$49.95 each. You can use them separately or in any combination.

If you're a professional landscape architect, office planner, interior designer or office manager you'll easily pay for your package in time savings with the first design you do.

If you're an amateur, you can generate and evaluate scores of interior and exterior designs



without worrying about hefty consulting fees.

Or perhaps you just like to draw. DaVinci gives you the perfect opportunity to create a world of imagination.

REARRANGE YOUR FURNITURE WITHOUT HURTING YOUR BACK.

The components in daVinci were designed by noted professional artist, sculptor and printmaker David Adamson, a Fulbright Fellow, and Professor of Art at the Corcoran School of Art in Washington, D.C. He

formulated them to be both artistically pleasing and functional in construction terms.

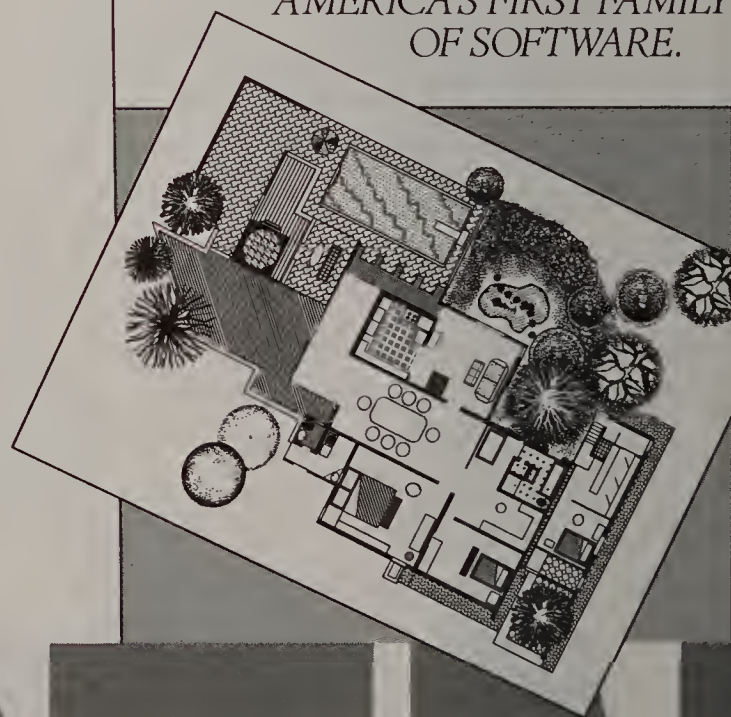
The daVinci components are scaled to give your designs true professional quality.

Of course you can print out your designs on your Macintosh Imagewriter™

To put daVinci to work, see your local software dealer, or contact Hayden Software, 600 Suffolk Street, Lowell, MA 01853, telephone 800-343-1218.

da Vinci is a registered trademark of Hayden Software Company, Inc.
MacPaint and Macintosh Imagewriter are registered trademarks of Apple Computer Corporation.

HAYDEN.
*AMERICA'S FIRST FAMILY
OF SOFTWARE.*



HAYDEN

PUT POWERFUL, COMPUTER-AIDED COMMERCIAL INTERIOR DESIGN ON YOUR MAC. ONLY \$199.95.

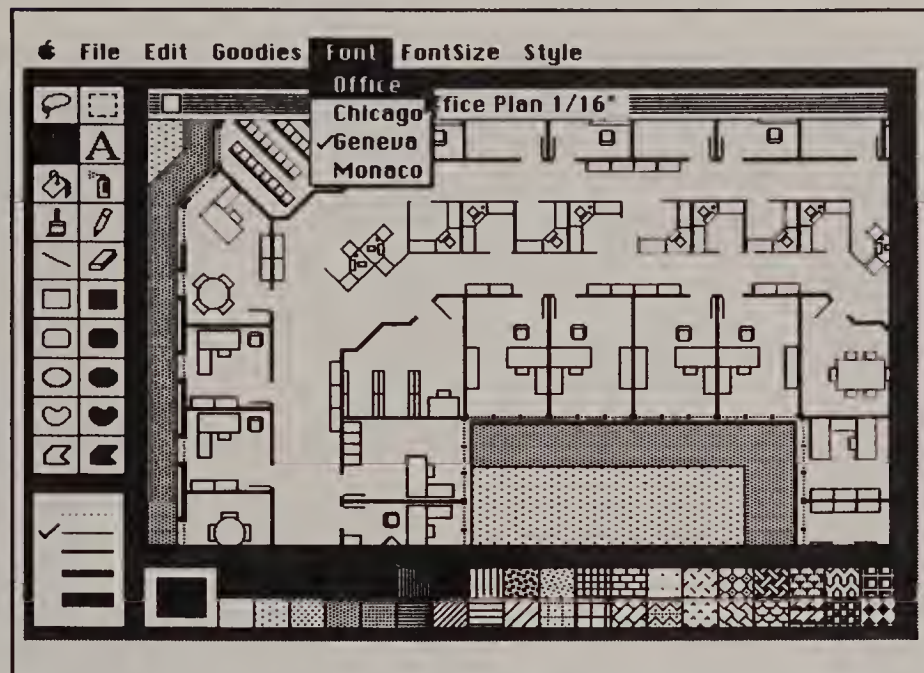
USE DA VINCI™ COMMERCIAL INTERIORS TO DESIGN ANY OFFICE SPACE.

Hayden's new daVinci™ Commercial Interiors. A simple, easy-to-use tool for effective space planning. Commercial Interiors works with your MacPaint™ program. It contains carefully scaled images of everything you need to design the interior of any commercial space, from a single modular office to an entire corporate complex. It includes desks, chairs, conference room furniture, theater seats, lunch room equipment, exercise facilities, library equipment, duplicators, even personal computers, word processors, and peripherals. Plus modular walls, coat closets, lavatory facilities, and more. Use them as is or alter them to suit your own ideas. Deletions or additions are no harder than a sweep and click of your mouse.

The unique keyboard replacement set shown here simplifies your design process even more. Each key represents a standard scaled image. To insert one of these images into your plan, simply hit the appropriate key. To change scale merely change your font size.

With Commercial Interiors, you'll produce totally professional plans, as good as anything you're likely to see on systems costing up to 20 times more.

Commercial Interiors was designed



by James Stokoe, a leading architect, and David Adamson, a well-known graphic artist.

COMMERCIAL INTERIORS CAN ACTUALLY HELP PAY FOR YOUR MAC.

Architects and interior designers can now use automation to increase business.

Corporate office or facilities planners and office managers can save the costly expense of outside consultants by using daVinci to plan new office spaces or to rearrange existing furniture, equipment, and modular walls.

Commercial Interiors can easily cut a three-week design project down to a matter of days. Design revisions take only minutes. So everybody reduces expensive time costs.

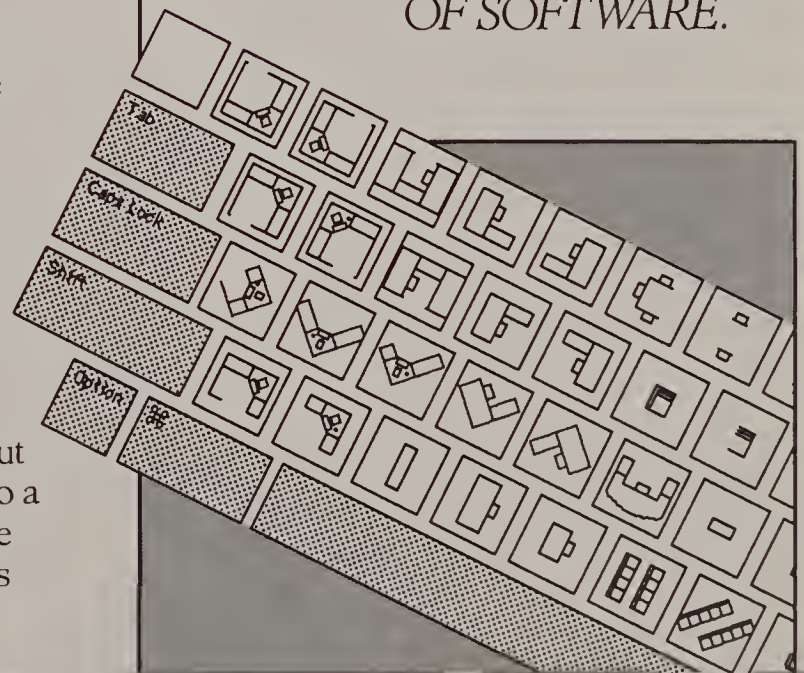
USE COMMERCIAL INTERIORS WITH OTHER HAYDEN DA VINCI PRODUCTS.

For total interior and exterior design plans, use Commercial Interiors in conjunction with daVinci Buildings and daVinci Landscapes.

To put Commercial Interiors to work on your Macintosh,™ see your local software dealer, or contact Hayden Software, 600 Suffolk Street, Lowell, MA 01854, telephone 800-343-1218.

da Vinci is a registered trademark of Hayden Software Company, Inc.
Macintosh and MacPaint are registered trademarks of Apple Computer Corporation.

HAYDEN. AMERICA'S FIRST FAMILY OF SOFTWARE.



HAYDEN

HAYDEN:BASE.TM

FORM A BETTER RELATIONSHIP WITH YOUR DATA.

SENSATIONAL RELATIONAL!

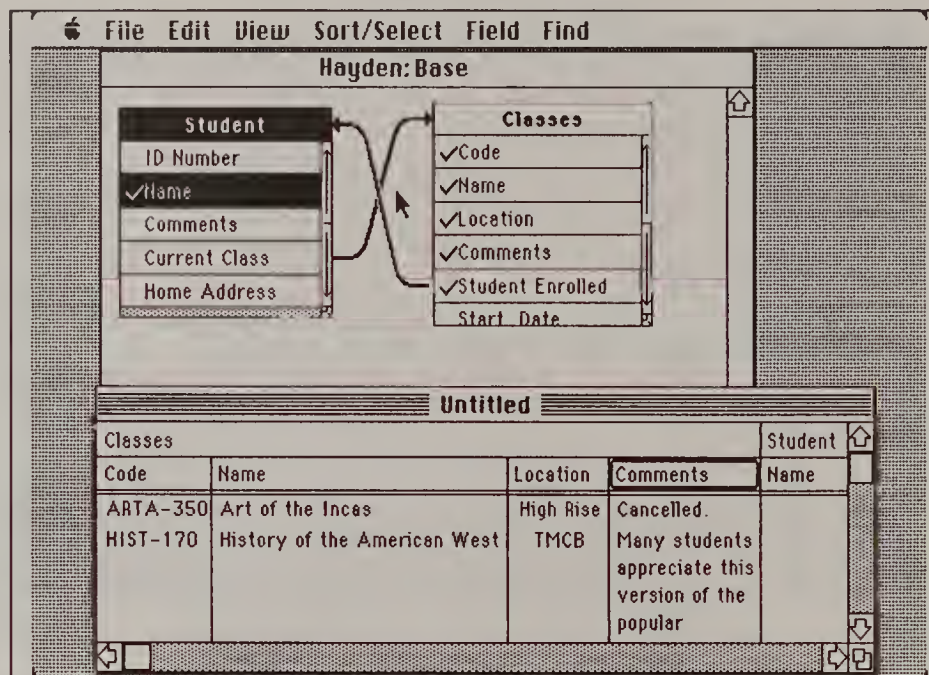
Hayden:Base is a fully relational database management program designed for the Macintosh.TM

It organizes your data, interrelates it and then lets you look at it from multiple points of view.

There's no end to the way Hayden:Base can manipulate and interpret your data. Base fields can contain single or multiple entries. Fields are of variable length and can contain alpha or numeric data, dates, times, even MacPaintTM-created illustrations!

*AN EASY WAY TO
KEEP TRACK OF WHO,
WHAT, WHERE, WHEN
AND WHY.*

Hayden:Base is so simple and elegant to use that you can perform the majority



of your analyses without ever touching the keyboard. You manipulate your data using your pointer and pull down menus. Overlapping windows let you look at several files simultaneously.

Hayden:Base lets you easily prepare reports or custom design forms.

If you change information in one file, Hayden:Base automatically updates information in up to 15 other related files.

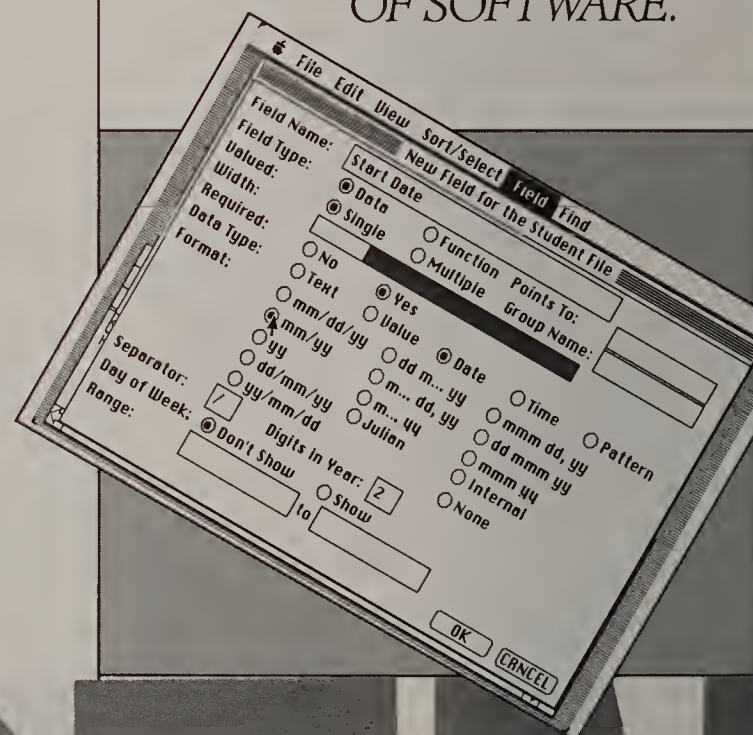
*BASE YOUR DATA
ON HAYDEN:BASE.*

For information about this innovative productivity tool, contact your local computer software dealer or Hayden Software, 600 Suffolk Street, Lowell, MA 01854, phone toll-free 800-343-1218.

Macintosh and MacPaint are registered trademarks of Apple Computer Corporation.

Hayden:Base is a registered trademark of Hayden Software, Inc.

*HAYDEN.
AMERICA'S FIRST FAMILY
OF SOFTWARE.*



HAYDEN

HAYDEN:SPELLER.™ MAKES MACINTOSH™ LETTER PERFECT.

TAKE THE FICTION OUT OF YOUR DICTION.

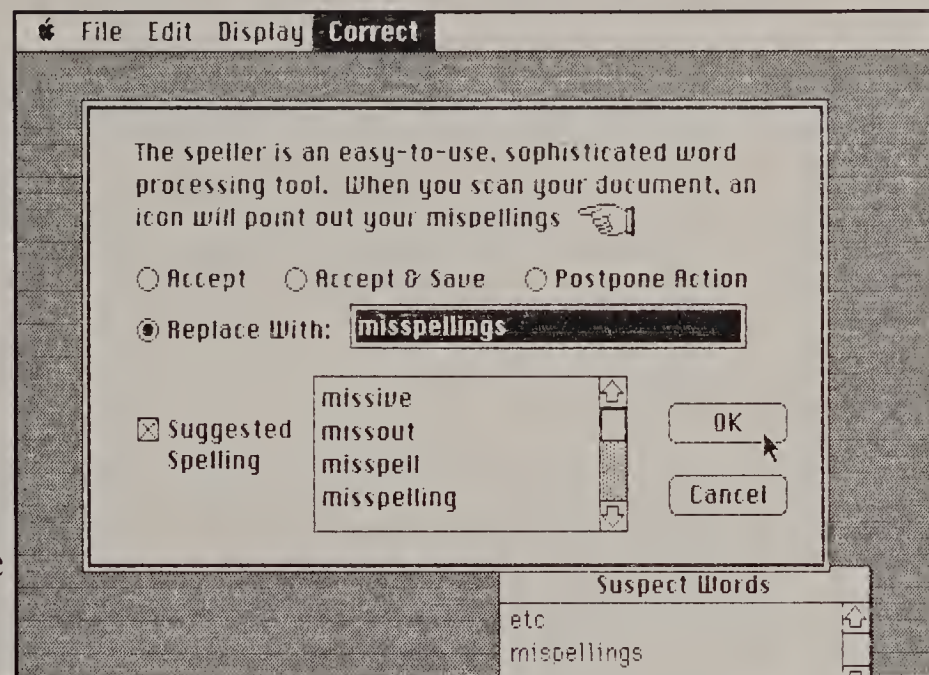
The Hayden:Speller spelling checker software program catches and corrects spelling errors and typos.

It's easy. Using pulldown menus and dialog boxes, you check your documents against a dictionary covering 97% of the most frequently used words in the English language. It's quick. Hayden:Speller can check a 5 page document in less than 10 seconds. It's complete. You can easily create your own "personal dictionary" with up to 50,000 words per disk. You can then let Hayden:Speller check these words, too.

EASY, FAST, AND SIMPLE.

Hayden:Speller either lists questionable words or points them out in context. You choose what to do next.

If the word's correct as is, let it go unchanged. If it's an



obvious misspelling, change it yourself. You can do it directly within the spelling checker program. There's no need to switch back to your word processing disk. If you don't know the correct spelling, have Hayden:Speller find it for you.

A click of your mouse makes the necessary correction.

WORKS WITH MACWRITE™ AND MICROSOFT WORD.™

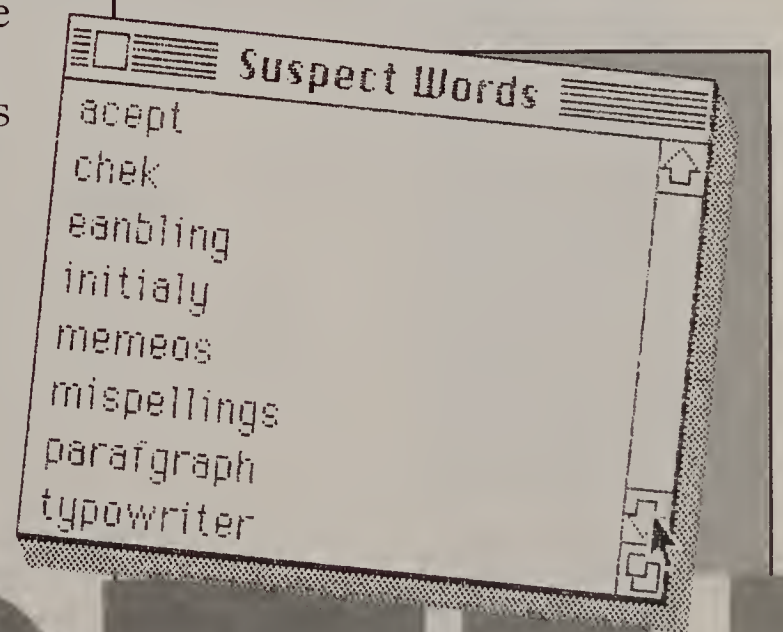
Hayden:Speller is fully compatible with MacWrite and Microsoft Word. It takes

advantage of their special Macintosh features, such as windows, menus, and of course, mice.

For more information on Hayden:Speller, contact your local computer software dealer or Hayden Software, 600 Suffolk Street, Lowell, MA 01854, phone toll-free 800-343-1218.

Macintosh and MacWrite are registered trademarks of Apple Computer Corporation.
Hayden:Speller is a registered trademark of Hayden Software, Inc.
Microsoft Word is a registered trademark of Microsoft Corporation.

*HAYDEN.
AMERICA'S FIRST FAMILY
OF SOFTWARE.*



HAYDEN

Microsoft BASIC Comes of Age

The new version 2.0 of Microsoft BASIC is worthy of the Mac's personality

Sharon Zardetto Aker

MBASIC 2.0 gives you much more programming power and flexibility than MBASIC 1.0. The language has both an Engineering version, which excels in rapid calculation, and a Financial version that performs decimal-based calculations with great precision. The debugging capabilities include an instant syntax checker—keywords appear in boldface as you type in your programs. Unlike the line numbers in most other dialects of BASIC, those in MBASIC 2.0 are optional. And you can access many of the ROM routines in the Mac's 64K treasure chest with calls from MBASIC 2.0.

Even though I am a BASIC aficionado and Microsoft fan, I was disappointed by the original version of Microsoft BASIC for the Macintosh (MBASIC 1.0). The language didn't take much advantage of the Mac's unique work environment. But Microsoft has redeemed itself in my eyes with its updated MBASIC 2.0. And don't let the Mac-Pascal snobs get to you. MBASIC for the Macintosh lets you create programs ranging from arcade-style games (see "The Voyage of Sonar Sub" in this issue) to applications for business, science, and education.

Although MBASIC 1.0 stands on its own as a functional, easy-to-use language, to fully appreciate Microsoft's upgrading job you should know a few facts about the original release. Creating a Macintosh-like program was impossible with MBASIC 1.0. You couldn't create pull-down menus or multiple windows, nor were any commands provided to let you use the Mac's sound capabilities.

Another major shortcoming of MBASIC 1.0 was the way you had to enter program lines. You typed program statements in the Command window. When you pressed Enter or Return, the statements appeared in the List window. To edit a line you had to move it back to the Command window, either by typing in an Edit command or by clicking on the Command window. The entire editing procedure was decidedly awkward.

MBASIC 2.0 has overcome most of the shortcomings of the original release. It lets you create a Macintosh environment from within a Macintosh environment. You can put control buttons in windows and invent menus for a menu bar, coax out some

sound, and dive into the Mac's graphics capabilities. MBASIC 2.0 also allows you to enter commands in the List window and edit lines as you would edit a *MacWrite* document.

MBASIC Revisited

As soon as you insert your MBASIC 2.0 disk, the improvements are apparent. The disk includes two MBASIC programs: a decimal, or "Financial," version and a binary, or "Engineering," version (see Figure 1). The Financial version does decimal-based calculations with great accuracy. Programs written in the Financial version, however, usually run more slowly than binary-based programs because the computer "thinks" in binary numbers while you enter decimal numbers. Programs written in the Engineering version are accurate enough for most purposes and run faster than those written in the Financial version. While you should probably write a mortgage calculation program in Financial MBASIC, Engineering MBASIC is appropriate when quick calculation is important—in a game, for example.

Programs written in one version can be run in the other version, as long as they have been saved to the disk in the proper format. Although data files created in one version are not immediately compatible with the other, the language provides conversion commands to make the files readable between versions.



For an example of an arcade-style game program created with MBASIC 2.0, see "The Voyage of Sonar Sub" in this issue.

Another improvement is that the greater variety of menu options gives you more control over your programs. You can display up to four windows in MBASIC 2.0: the Output window, two List windows (in case you want to view two portions of your program simultaneously), and a Command window for immediate commands (see Figure 2).

The Command window is a necessity. In most versions of BASIC, the difference between an immediate command (which is executed right away) and a delayed command (which is executed when the entire program is run) is the line number. Since MBASIC doesn't need line numbers, the only way to differentiate between the two command types is by which window is being used.

Lines and Labels

One of the new features of MBASIC 2.0 is that line numbers are now optional, rather than required. The concept of "optional line numbers" is somewhat misleading. Line numbers are optional in the sense that you are not forced to use them. If you do use them, however, they don't function like "normal" line numbers.

In MBASIC 1.0, typing in the commands
10 PRINT "one"
30 PRINT "two"
20 PRINT "three"
results in the output
one
three
two.

The program commands are executed in line number order. In fact, regardless of the order in which you enter commands, when you list your program the commands appear in numerical order.

In MBASIC 2.0, program commands stay in the order in which you type them and are executed in the order in which they appear in the List window. Commands are not executed in numerical order unless you have arranged them numerically. Line

numbers serve only as reference points for controlling the program's flow. You can include a command, such as GOTO 20, and the program will jump to the command with that line number.

One handy addition to MBASIC is labeling. Labels are similar to line numbers and act as reference points that make the program easier to read and allow you to redirect program flow (like a GOSUB state-



Figure 1

Two versions of BASIC are provided on the MBASIC disk. The Financial version offers accuracy for decimal-based calculations, but it runs programs more slowly than the Engineering version. The program symbol (\$ for Financial, π for Engineering) is included on each program icon, indicating the version it was created with.



Figure 2
MBASIC has three start-up windows. A fourth window (a second List window) lets you view two parts of a program simultaneously. Notice how the keywords appear in boldface type in the

List window. One PRINT command is misspelled, so it doesn't register as a keyword. The boldface feature serves as an instant syntax checker.

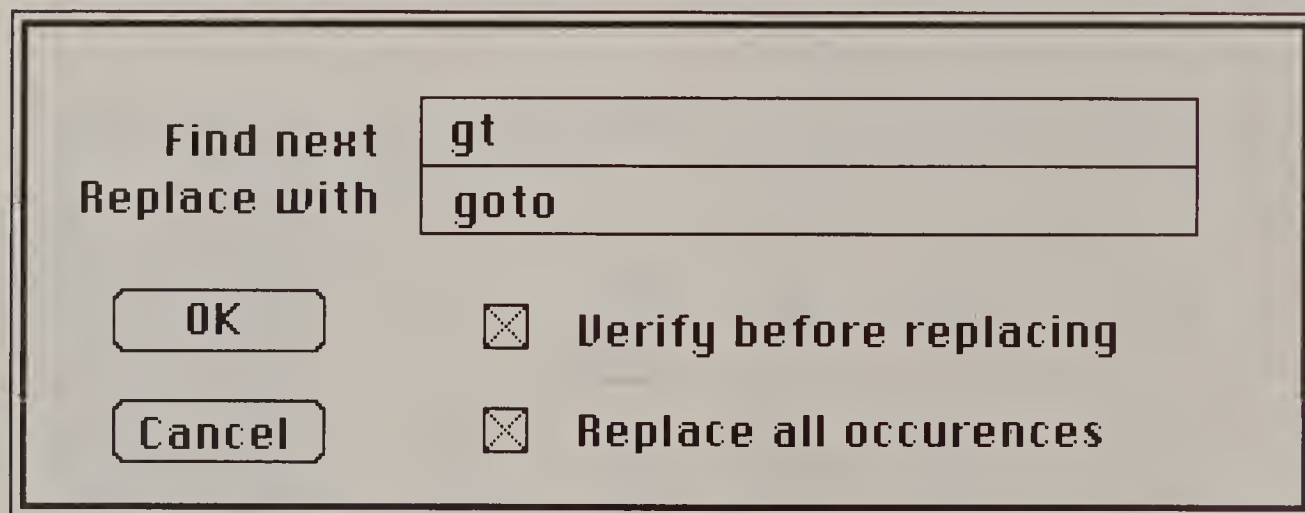


Figure 3
With MBASIC's Replace function, you can alter the program listing. For instance, you can change all the occurrences of a certain label or variable name. You can also use the function to

edit a program that has been written with shorthand or abbreviated labels.

ment). Labels can consist of from 1 to 40 letters, periods, or digits. A program line can have a label, a line number, or neither one. In addition, a label can be put on a line of its own.

Since MBASIC 2.0 is designed without the line-numbering scheme used by most other BASICs, a few other features are added to make editing and changing parts of a program easier. A Find command is included, so you don't have to scroll through a lengthy program to locate a particular line or command. In addition, Find Label and Find the Cursor have been added to the Search menu. The Replace feature lets you type in your own shorthand. You can enter often-used commands such as INPUT, GOTO, or RANDOMIZE with abbreviations such as IP, GT, or RG. Later, you can use Replace to change them to the full form (see Figure 3).

Of course, because the new MBASIC eliminates line numbers, commands related to numbering are unnecessary. Old BASIC hands may notice that the Auto and Renum commands are missing, but since you seldom number all of a program's lines in MBASIC 2.0, the automatic line-numbering command isn't needed. And if lines aren't numbered, you don't need Renum to renumber them.

A Bold Addition

Some of the less obvious enhancements to the language may not seem significant. One nifty little feature in MBASIC 2.0 is the way listings are formatted on screen. As soon as you press Return or Enter after typing in a program line, the keywords in that line appear in boldface type. This feature serves as an instant syntax checker. Since incorrectly spelled keywords will not be boldfaced, you will probably notice errors immediately.

Two other minor but useful enhancements are the functioning Tab key and the wealth of \mathbb{H} -key options. The Tab key feature lets you indent loops or other sections of the program for easy reading while you work in the List window. And the \mathbb{H} -key options serve as convenient alternatives to mouse-based menu selections.

Creating a Macintosh Screen

Designing a Macintosh-style user interface with a menu bar, pull-down menus, windows, and buttons is a breeze with MBASIC. By comparing the listing in the figure "Trivial Menus" with the screen shown, you can probably decipher most of the commands yourself.

The sample program is static—it simply sets up the screen. You can pull down a menu, and, if you click on an active button, the menu is highlighted; nothing else happens. Other commands let you know which menu you pulled down or which button you pushed. But these features really deserve an article all to themselves.

Here are descriptions of the command statements used to create a Mac-style program shell.

● **MENU** *menu id#, item id#, state, title*

The MENU statement gives you control over the design of the menu bar and pull-down menus. The *menu id#* is a value from 1 to 10 that defines the positions of items on the menu bar. (The Apple menu is at the zero position.) The *item id#* refers to a specific item in a menu; the value can range from 0 to 20, with the zero position being the menu name that appears on the menu bar.

The *state* represents one of three conditions: inactive (dimmed, indicating unavailable for selection), active, or active with a check mark next to it. The *title* variable is the name you have chosen for the menu or its options.

● **WINDOW** *id#, title, coordinates, type*

The WINDOW statement lets you create multiple output windows in your programs. The *id#* designates which of four possible windows is being cre-

ated. The *title* is the name that appears in the title bar of a document window. The *coordinates* describe the size and placement of a window by giving the pixel coordinates of its upper-left and lower-right corners. The *type* defines the kind of window you create from among the four choices: document style or one of the three styles of dialog boxes.

● **EDIT FIELD** *field id#, default, coordinates, type, justify*

The edit field is the rectangle within a window in which you can type information. Each edit field has its own *id#* and is automatically placed in the currently active window. The *default* is the highlighted (selected) text that appears within an edit field until you type something to replace it.

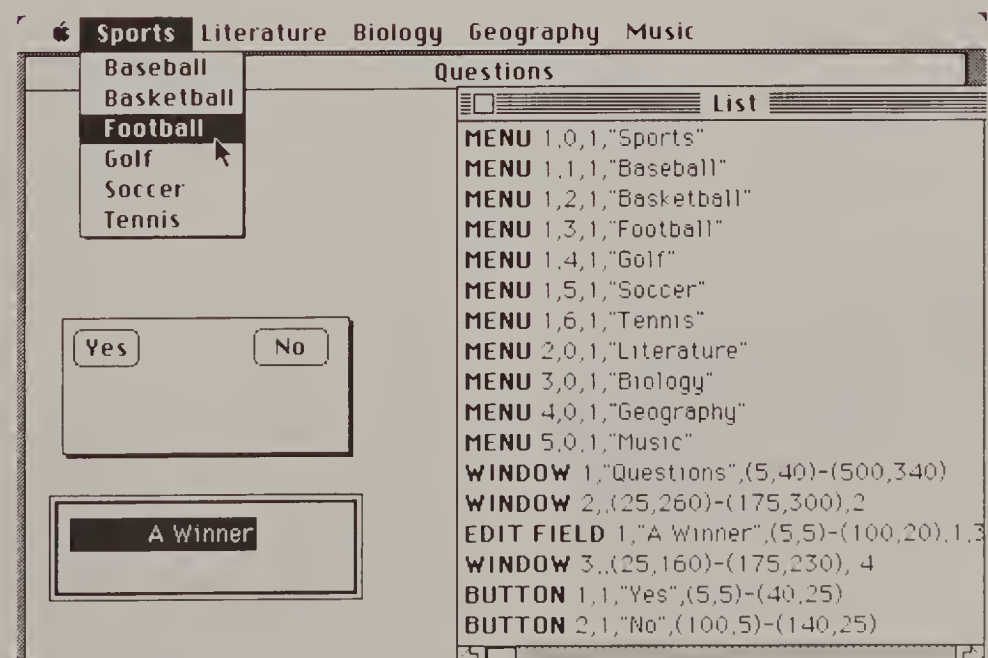
The *coordinates* define the size of the edit field relative to the window it is in, rather than to the entire screen. The *type* is

a number from 1 to 4 that describes whether a frame exists around the edit field and whether a Return key will register in the field. The *justify* argument is 1, 2, or 3, for left, centered, or right, respectively.

● **BUTTON** *button id#, title, state, coordinates, type*

The BUTTON statement places a button within the active window. The *id#* serves as a unique reference, and the *title* appears in a push button beside the check box or radio button. The *state* can be inactive, active, or active and already selected as the default button.

The *coordinates*, given relative to the window, define the size of the push button or the area of button and text for the other styles of buttons. The *type* can be one of three styles: a regular push button, a check box, or a radio button.



Trivial Menus

A menu bar and three windows were created by the program in the List window. The MENU RESET command restores the MBASIC menu bar.

Traces

MBASIC, Macintosh BASIC (the BASIC under development at Apple), and Macintosh Pascal all have special program-tracing functions. Whether this common feature is due to the special Macintosh environment, one-upmanship, or both (my vote), I certainly appreciate it.

The MBASIC Trace feature, available both as a BASIC command and as a menu selection, slows down program execution and frames the currently executing command in the List window. This design is vastly superior to that of most BASIC trace functions. These usually spit out the line number of the current program line, which obscures part of the output screen. In addition, you can use the MBASIC 2.0 Step option, which runs the program one command at a time, pausing until you press a key.

Interactive Features

Who says there are no thrills in BASIC programming? Wait until you design your first custom menu and see your own menu bar displayed across the top of the screen. With the WINDOW command, you can display up to four windows on the screen at once. Windows are available in four varieties. The first is the document window, complete with size box and title bar. The other three are types of dialog boxes: single border, double border, and shadow border (see Figure 4).

You can use the BUTTON command to put an unlimited number of buttons in a window, with text within or beside them. The button type can also be specified. You can use a push button to OK or cancel an operation, a check box to show that a certain parameter has been chosen, or a radio button, the circular kind in which a black dot appears when you click on it (see Figure 5).

The MENU command lets you set up your own menu bar. You can designate at what position on the bar the menu will appear, what items will be on each menu, and when choices will appear dimmed, indicating that they cannot be selected (see "Creating a Macintosh Screen"). Other commands set up the Mac's interactive screen. EDIT FIELD, for instance, lets you put text in a dialog box.

Event-trapping constructs are also provided. These alert the computer to specific user input, such as when you select a menu option or move the mouse. When the program detects an action, it responds

by branching to the appropriate event-handling subroutine. The MENU ON statement, for instance, lets the computer detect a menu selection. A reversal of the keywords MENU ON (to ON MENU) followed by the appropriate instruction tells the program what to do if the event is trapped.

Other event trappers include MOUSE ON, TIMER ON, BREAK ON, and DIALOG ON. MOUSE ON alerts the computer to a mouse click, and TIMER ON allows the computer to carry out an operation after a specified number of seconds has passed. BREAK ON intercepts your efforts to halt the running of the program. Finally, DIALOG ON keeps track of the way you react to edit fields and buttons in a dialog box. Of course, MBASIC also has functions that allow you to find out which window was activated, which button was selected, how far the mouse was moved, and so on.

MBASIC Sound

MBASIC 2.0 contains only two sound-related commands: SOUND and WAVE. I was disappointed to find only two sound commands; these just don't make the most of the Mac's sound capabilities.

The SOUND command produces music and other sounds through the Mac's speaker. You can specify the pitch, duration, and volume of a note, as well as which of the computer's four voices (sound channels) will play. The duration can be from 0 to 77, in which 18.2 represents 1 second. Unfortunately, the pitch has to be defined as a frequency (cycles per second).

If you program by musical notation rather than in frequencies, you have to manually calculate all the notes. For instance, if concert A is 440 cycles per second, the octave above is twice that many, the half tones between are one-twelfth the distance between the octave notes, and the pattern for the notes in a major scale is . . . wait, don't forget that the frequency increments between the half tones will change with each octave. . . .

You would be spared all this calculation if MBASIC 2.0 used the PLAY statement contained in many BASIC dialects. The PLAY statement enables you to compose your tune using the letter names of the notes.

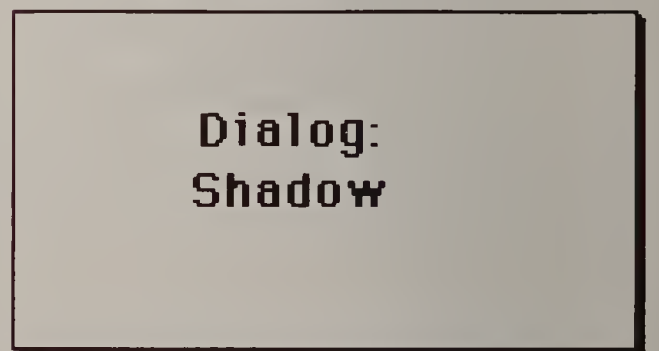
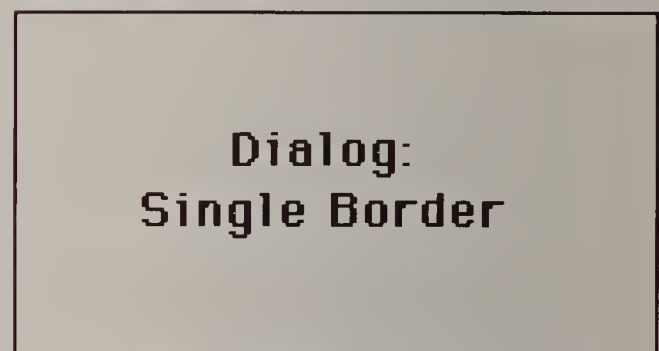
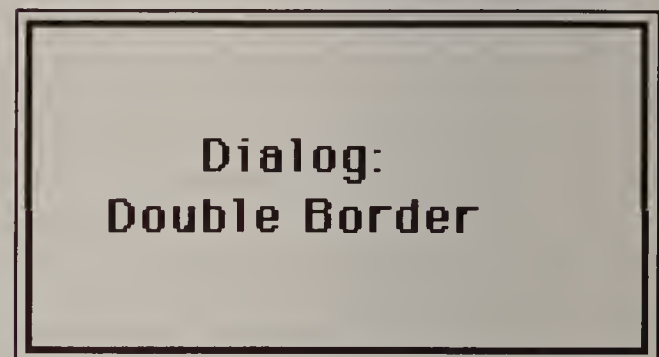
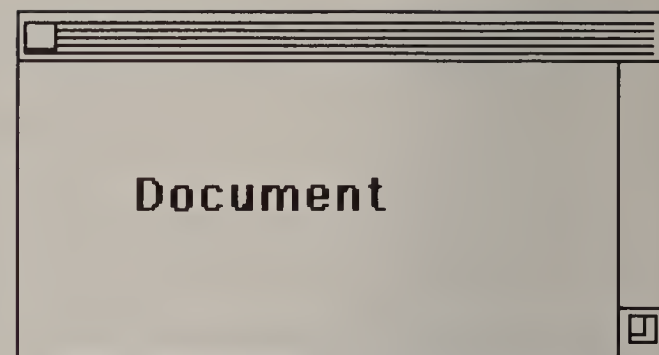
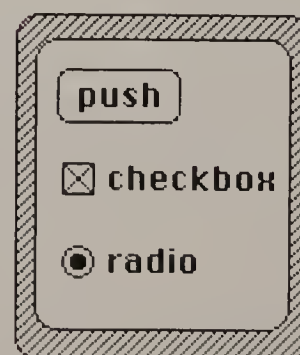


Figure 4

You have access to four types of windows with the MBASIC WINDOW command. The document window has a title bar and a size box. With the new SCROLL command, you can scroll through the contents of a window you create.

Figure 5

The BUTTON command allows you to design three types of buttons and specify the text that should be printed within or alongside them. You can also designate a button to be already selected, acting as the default choice in the dialog box.



The WAVE command lets you control the kinds of sound you can produce by defining the shape of a sound wave. While you can use the SIN function as the argument to produce a basic sine wave for a sound channel, other waves are defined by 255-element arrays whose contents, if graphed, describe the wave shape.

As a sound wave alters from the smooth curves of a sine wave, its timbre (or quality) changes. The curved sine wave produces a clear, flutelike sound. As the wave shape changes to the jagged peaks of a triangle wave, the sound becomes nasal, like an oboe. A square wave produces a hollow, woody sound.

It would be convenient if you could specify more wave shapes by name. As it stands, WAVE is a powerful but complicated feature. I'd gladly trade some of its power for a little more ease of use.

Subprograms

Subprograms are one of the advanced features added to MBASIC 2.0. A subprogram, though similar to a subroutine, is different in a few important respects. A subroutine is a group of commands that is executed more than once during a program. For example, you might need to erase the right half of the screen several times while the program runs. Instead of repeating the commands each time they are needed, you can type them in once and label the subroutine appropriately.

If you label the subroutine "Wipe," for example, a simple "GOSUB Wipe" command appearing at any point in the program makes the computer jump to that subroutine. When the RETURN command at the end of the subroutine is encountered, the program picks up where it left off.

While subroutines are an integral part of an entire program, a subprogram is a separate program that can be called within a program. One advantage of a subprogram is that it cannot be executed accidentally. A program can flow right into a subroutine if you don't redirect it in time; the end result is that the program stops running when it encounters the RETURN that signals the end of the subroutine. A subprogram begins with a SUB statement and ends with an END SUB statement; it is executed only when you specifically call it.

Subprograms use variables that are distinct from the main program even when the variable names are identical. The values of the variables can be passed back and forth between the main program and the

subprograms. However, you use a specific command to swap variables so they can't be swapped by accident. This "local" variable structure means you can create a collection of subprograms for operations you use frequently. When you merge the subprograms into a main program, you don't have to worry about adjusting the variable names, as you do with merged subroutines.

Numbers and Strings

While I enjoy calling ROM routines, playing with graphics, and designing menus, I tend to ignore the more common BASIC functions. But MBASIC 2.0 is no weakling when it comes to slinging strings and crunching numbers. In BASIC, a number takes the form of a constant that is either positive or negative. A string is a sequence of alphanumeric characters that appears in a program between quotation marks. Examples are "hello", "this is a string", and "so..!@# is this".

All the dialects of Microsoft BASIC are rich in string functions, and the Macintosh version is no exception. Only one new string function, UCASE\$, has been added to version 2.0. However, this repertoire of functions is adequate because it includes SPACE\$ and STRING\$ (the dollar sign stands for *string* in BASIC).

SPACE\$ is used to create a string containing a specified number of spaces. SPACE\$(10) is an example. This function is useful for blanking out sections of the screen display. STRING\$, which creates a string of specified length of any one character (say, 20 asterisks), can come in handy for a variety of screen-formatting jobs.

The new string function, UCASE\$, changes all the letters in a string to uppercase. Because MBASIC sorts characters according to ASCII character numbers, and capital letters come before lowercase letters in the ASCII table, Z is placed before *a*. One use of UCASE\$ is to capitalize all the letters in a string so that alphabetical sorting is done correctly.

MBASIC 2.0 does have one limitation when you create strings: they can't contain more than 32,768 characters!



SOFTWARE	
ATI Mac Coach	\$ 45.00
Continental Software The Home Accountant	\$ 57.00
Desktop Software 1st Base	\$110.00
Intermatrix Mac Phone	\$155.00
Living Videotext Thinktank	\$ 85.00
Magnum Mc Pic	\$ 32.00
Mainstreet Mainstreet Filer	\$160.00
Microsoft Basic Interpreter	\$ 99.00
Chart File	\$ 85.00
Multiplan Word	\$125.00
Monogram Dollars and Cents	\$125.00
Software Publishing PFS File	\$ 97.00
PFS Report File / Report Combo	\$ 70.00
Telos Software Filevision	\$ 70.00
	\$110.00
	\$119.00

Incredible Prices with Professional Support!

- Corporate accounts welcome
- We accept VISA & MasterCard
- No credit charge surcharge
- Free technical support

HOURS
Order desk & technical support open:
8 a.m. to 6 p.m. Monday-Friday
10 a.m. to 2 p.m. Saturday

TO ORDER CALL
1 (800) 328-4473 (818) 705-1895 (CA)

6934 Canby Street Suite 104 Reseda, CA 91335

SHIPPING
\$4 per item UPS surface (\$8 for Blue Label); printers \$25

TERMS
All prices subject to change. We honor Cashiers Check / MO / Bank Transfers immediately. Allow time for company & personal checks to clear. California residents add sales tax.

Circle 98 on reader service card

MBASIC Graphics

MBASIC graphics can be divided into two categories: BASIC commands and Macintosh ROM routines. The ROM routines, described in *Open Window* (May/June), are the same as those in MBASIC 1.0. As becomes the Macintosh, many of MBASIC's graphics commands are better than the graphics commands available in other BASICs.

The CIRCLE command starts with a definition of a center point and radius:

```
CIRCLE (200,100),50
```

This statement draws a circle with 200 and 100 as its center coordinates on the screen; it has a radius of 50 pixels. However, you can also tell the computer which part of the circle to draw, to create arcs, or to collapse the circle into an ellipse.

As with most of the graphics commands, a Step option is available with CIRCLE so that the coordinates you give can be relative to the last ones used rather than absolute, with a definite location on the screen.

Drawing a straight line is simple; you use

```
LINE (5,5)-(100,100)
```

This statement draws a diagonal line beginning at the upper-left corner of the screen. The LINE command, however, does more than draw a line; with the *b* option a box appears, and with *f*, the box is filled. The statement

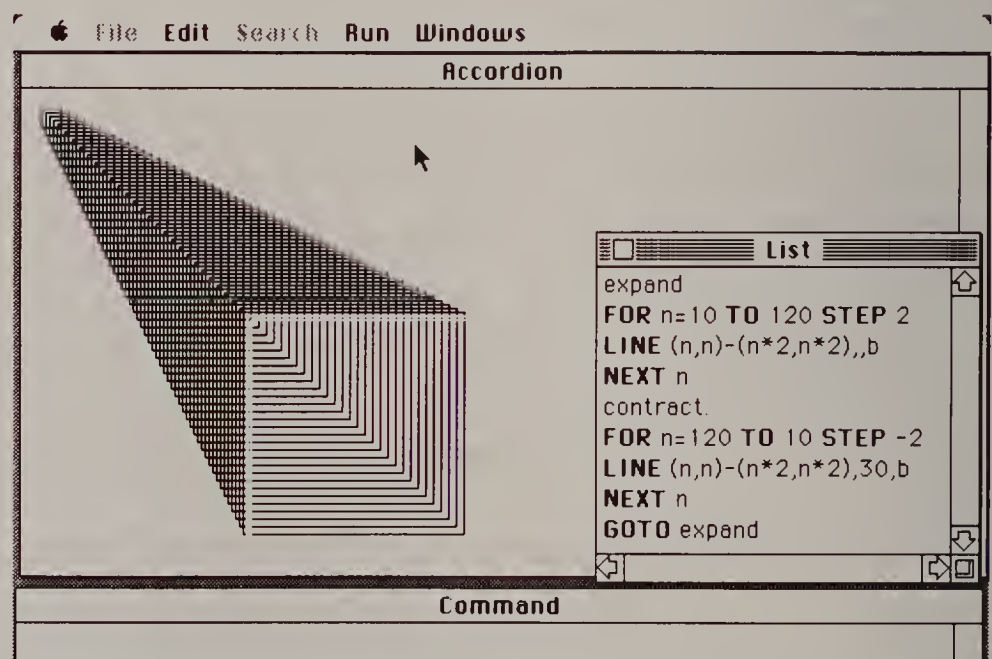
```
LINE (5,5)-(100,100),b,f
```

draws a filled box whose upper-left and lower-right corners are the coordinates given in the parentheses. The double comma is necessary because the color parameter belongs in that spot; leaving that variable out simply causes the box to be drawn in the default color, black. (Don't get your hopes

up: the only possible colors are black and white.)

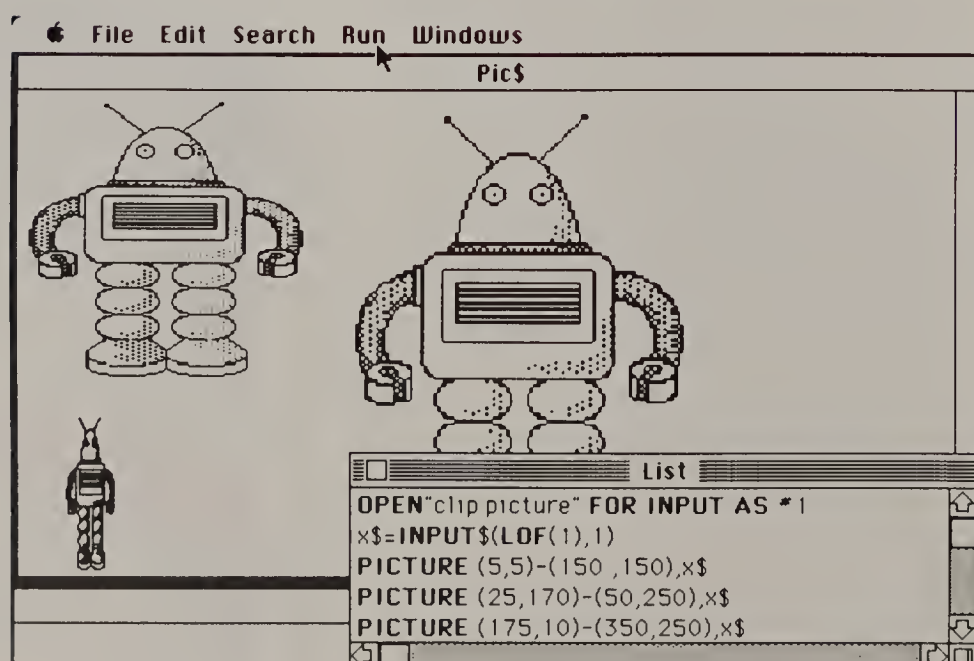
The Step option is also available with LINE, in two places. Relative coordinates can be given for the beginning of the line or for the end of the line.

The program listing in the "Accordion" figure uses the box variation of LINE. The loop draws increasingly larger boxes and then reverses and erases them. The erasure is done by using the "color" argument in the LINE command. A code of 30 signifies white, which erases the black lines by drawing over them.



Accordion

The "b" option of the LINE command draws boxes. Drawing the boxes in black and then drawing over them in white gives the illusion of motion.



Robots

The GET command stores an image in a graphic array. PUT lets you place the figure anywhere you want it in either its original or an altered size.

PSET and PRESET allow you to darken individual pixels and then erase them on the screen. You can't dip into the Macintosh Toolbox just to handle a single point on your screen, so these plotting commands will undoubtedly get a lot of use. The statement `PSET(10,50)` darkens the pixel at the specified coordinates, putting a single dot on the screen. The statement `PRESET(10,50)` "turns the pixel off," erasing the dot.

The listing in the "Echo Draw" figure illustrates the use of PSET in conjunction with its Step option. The checkmouse routine keeps the program looping until the mouse button is pressed. The draw routine PSETs a point based on the horizontal and vertical position of the mouse when its button is pressed.

Three other points are also darkened and offset from the original by using the Step option. The end result: if you draw in the upper-left quarter of the screen, the figure is echoed in the other three quadrants.

The GET and PUT statements are by far my favorite BASIC graphics commands. These commands were enhanced for MBASIC 1.0 and even further enhanced for MBASIC 2.0.

The GET statement gives the computer coordinates on the screen that describe a rectangle's upper-left and lower-right corners. Everything

within the box is stored in an array, which must have been previously dimensioned to the proper size. (An array is a special way of storing information; dimensioning an array tells the computer how much memory to set aside for the information.) The PUT statement gives a coordinate on the screen, and the picture stored in the array is placed with the upper-left corner on that spot.

The great advantage of PUT is the command's *action-verb*. This variable lets you control the way a picture is drawn on the screen and how items will blend together.

The 1.0 enhancement to the PUT statement was that the "box" you defined with the GET statement could be drawn in a different size. You could stretch or shrink the picture stored within the box by using the PUT statement.

The 2.0 enhancement to the GET and PUT statements is the addition of an index parameter that lets you store more than one image in an array, referring to each with subscripted variables. With the index argument

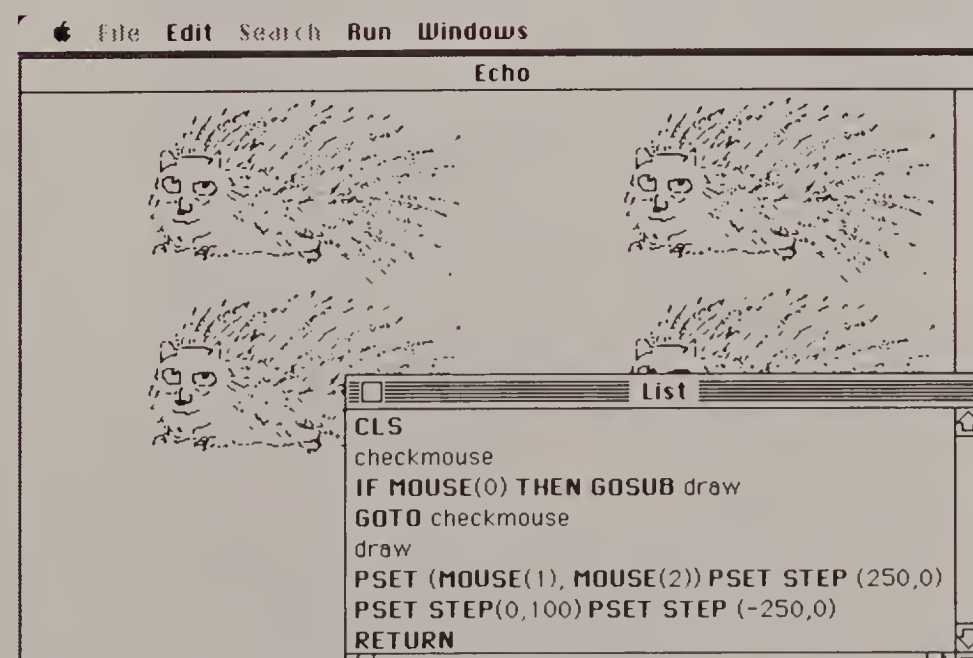
in the PUT statement, you can access the sequence of pictures quickly from within a loop, giving you an effective animation technique.

Last, but certainly not least, are the newest additions to the MBASIC graphics commands: PICTURE and its relatives PICTURE ON, PICTURE OFF, and PICTURE\$. The PICTURE commands let you record the graphic contents of a screen and store them in a string that can be recalled and displayed.

The PICTURE commands also allow you to use the Clipboard to import (or export) information into (or out of) a BASIC program. The "Robots" program created by Greg Lobdell of Microsoft (see the "Robots" figure) demonstrates this function. Before the program was run, the robot was copied from the Scrapbook onto the Clipboard. Printing the contents of `x$` with the PICTURE command is similar to the PUT statement, in that you can distort the image by giving different coordinates for its placement.

Echo Draw

Drawing in the upper-left corner of the screen with the mouse cursor causes four figures to appear.





mac

Eats The Competition

Show Your Colors with this mac t-shirt now available to you for only: \$7.95 plus \$2.00 shipping and handling. Order more than one and pay only one shipping and handling fee.

Send Check or Money Order To:

DESIGNWARE
P.O. Box 15750
Asheville, N.C. 28813

NC residents add 4½% sales tax.

Dealer Inquiries Welcomed

RUSH MINE TO:

Name _____
Address _____
City _____
State _____
Zip _____

SIZE	Quantity Each
S	_____
M	_____
L	_____
XL	_____

Please allow 4-6 Weeks For Delivery

Circle 130 on reader service card

The language also has more numeric functions than you could ever use in one program. In Financial MBASIC, numbers are automatically stored as double-precision numbers. This feature provides a high degree of accuracy because double-precision numbers are stored with up to 14 digits of precision. The decimal math pack in Financial MBASIC also guarantees extra precision in dollars-and-cents calculations.

Everything in Between

I have described the highlights of MBASIC 2.0, but many other features are available that give you great programming flexibility. For instance, some of the usual MBASIC graphics commands (see "MBASIC Graphics") have been enhanced; these take advantage of the graphics capabilities of the Macintosh. MBASIC also has several Save options. Programs can be saved in any of three formats—Compressed, Text, and Protected. Compressed format saves the program in a binary version, which takes up less space on disk. Text format makes the program file accessible to a word processor, and Protected format makes the program unlistable (see Figure 6).

Besides letting you use a menu option or a BASIC command to load a program directly from the desktop or from within the language, MBASIC lets you load programs so that they run immediately after loading. You can also combine programs and string them together with the MERGE and CHAIN commands. With these commands you can combine shorter programs into longer ones, both while you write a program and while the program runs.

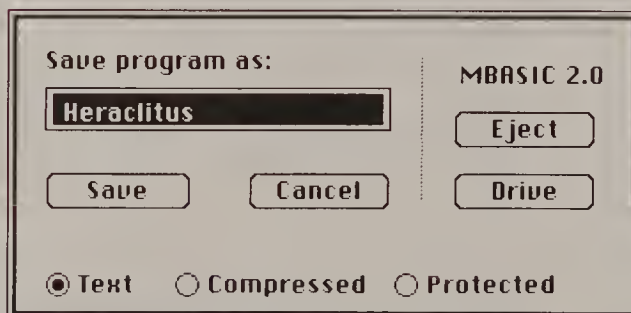


Figure 6

MBASIC programs can be stored in three different formats. You use Text format when you want the program file to be accessible to a word processor, to both versions of MBASIC, or if you plan to use functions such as MERGE or CHAIN. Compressed, or binary, format takes up less room on a disk. A program saved in Protected format cannot be listed.

You can create and access both random and sequential files with MBASIC. You also have the ability to address programs and data on an external disk drive. Since the BASIC disk itself does not have much space to store data files, access to a second disk is important.

The revised documentation promises to be a great improvement over the MBASIC 1.0 documentation. The Macintosh ROM routines that MBASIC can use, for example, are much better documented. While reading the preliminary documentation for MBASIC 2.0, I found the intriguing sentence: "Machine language routines can be dynamically bound to BASIC at run time." This capability opens a wealth of advanced possibilities; any routine from a "library" can be called from within your program. However, this very advanced programming technique is not for the faint of heart, and you will need additional information (available from Microsoft), before you can begin to "dynamically bind."

This implementation of the language does have its faults. My chief complaint is the lack of an Undo command. I have often selected segments of a program, intending to copy them to the Clipboard, and pressed Shift-C instead of ⌘-C. I am then left with a capital C in place of a dozen lines of unsaved program code.

Trading Up

If you bought MBASIC 1.0, you can get the new version by sending Microsoft your 1.0 disk and an upgrade fee. The exact fee was not set at press time, but it will be in the \$50 range. The programs you wrote with MBASIC 1.0 run under version 2.0, so the upgrade fee is worth every penny. Check with your Apple dealer for more information. □

▲▲▲▲▲▲▲▲▲▲ Sharon Aker is a freelance journalist and author of two forthcoming books: MacPack (Ashton-Tate) and Microsoft BASIC for the Mac: A Beginner's Guide (Scott, Foresman & Co.)

▲▲▲▲▲▲▲▲▲▲
Microsoft BASIC 2.0
Microsoft Corporation
10700 Northup Way
Bellevue, WA 98004
206/828-8080
List price: under \$150

THE MOST USEFUL IDEAS ARE OFTEN REMARKABLY SIMPLE.



The first filing system was a remarkably simple way to do incredibly useful things. Like organize a business and make it work.

PFS®:FILE and PFS:REPORT are remarkably simple software programs that can help you organize your business faster and more effectively.

And both programs are amazingly easy to learn.

FILE and REPORT were designed for people without computer experience. So all instructions are easy to understand. And you can be productive quickly.

FILE lets you record, retrieve and review information like personnel records and purchase orders. Instantly. You can even cross reference by department or job or however you want.

And you can arrange information in "forms" you design yourself. Or you can take advantage of PFS SOLUTIONS which are pre-designed forms for popular applications like inventory, invoices and ledgers. Either way, you can quickly and easily create the filing system that fits your needs. Not your computer's.

REPORT is the perfect companion program to FILE. Because it gives you the power to summarize and perform calculations on information you've stored with FILE.

With REPORT, you can create presentation quality summaries in table form in just minutes. Automatically sorted, calculated, formatted and printed!

FILE, REPORT and SOLUTIONS are fully integrated with the PFS Family of Software. Which means your computing capabilities can always expand to meet your needs.

PFS: It's the powerful software that's simple to learn. It's the power of simplicity.

See your computer dealer for more details.

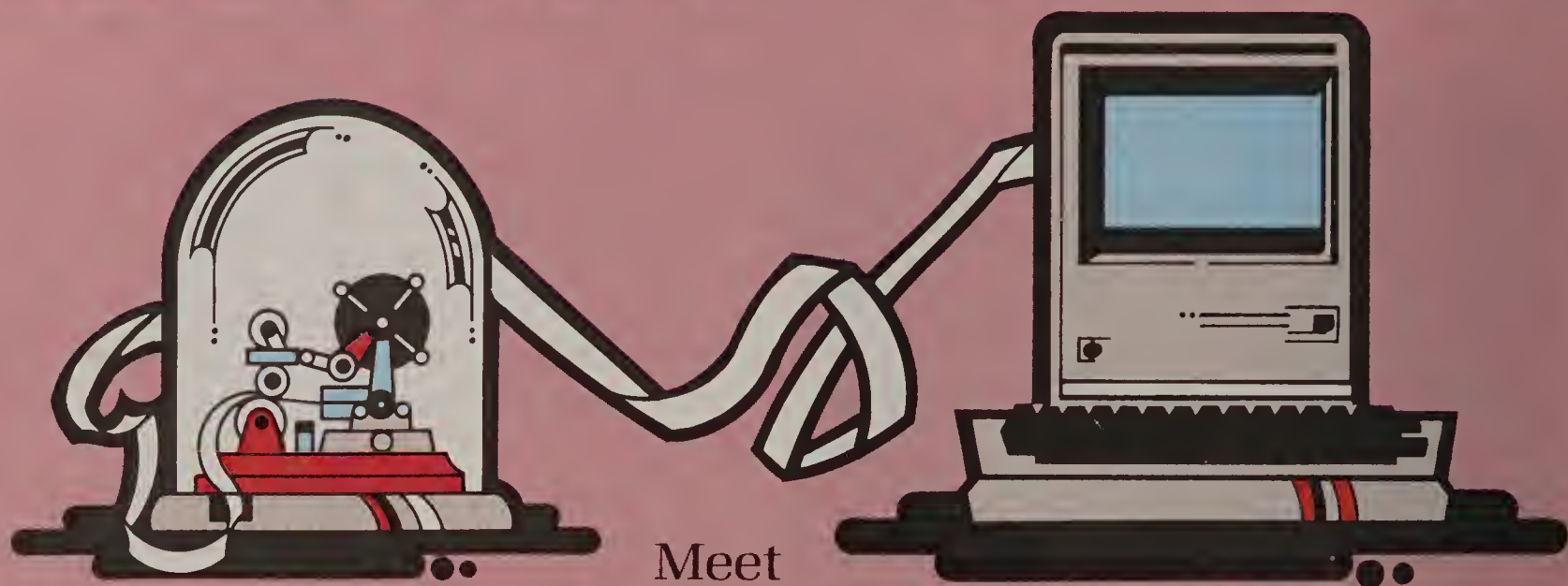


PFS SOFTWARE THE POWER OF SIMPLICITY

PFS:FILE and PFS:REPORT currently work on Apple, IBM, Macintosh,* Tandy,* Commodore,* DEC, Gavilan,* Hewlett Packard,* NEC,* Panasonic, Polo,* Texas Instruments, Compaq, Chameleon, Columbia, Corona, Eagle and Hyperion personal computers.

*Does not work with PFS SOLUTIONS

INVEST IN YOUR PERSONAL SUCCESS



Meet The Investor

First in a Series of Programs for Professional People
Now available from P³ INC.

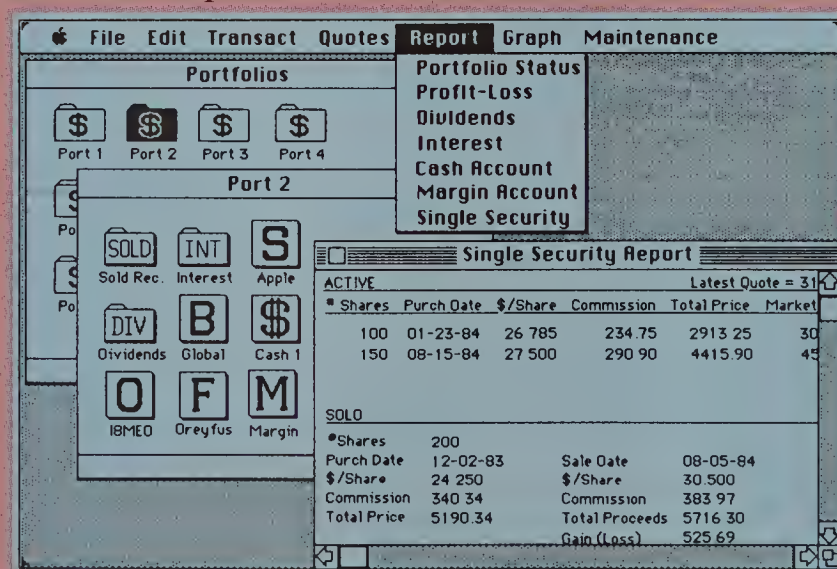
SOPHISTICATED

The Investor is a sophisticated system of portfolio management, created exclusively by P³ INC. Capitalizing upon the incredible powers of your Macintosh, The Investor gives you control over your investment portfolio.

VERSATILE

Attain maximum performance with minimum effort. The Investor is easy to use, flexible and fast. A valuable financial aid for decision-making and tax preparation, it produces reports such as Portfolio Status, Capital Gains/Losses, Interest Income and Dividend Income.

Security quotes are updated automatically, via Dow Jones News/Retrieval Service. Graphics will chart your portfolio performance.



PROFITABLE

The financial advantages of The Investor far exceed its moderate price. With valuable information at your fingertips, you may find the services of a full-fledged broker unnecessary. See your dealer for a demonstration, or send for our \$15.00 Sample Demo Disk.

The Investor
\$150.⁰⁰

Programs for Professional People

P³ INC. is dedicated solely to producing superior Macintosh application software. No other computer compares to Macintosh, and no other software compares to P³ INC.

An entire series of easily learned, easily used programs will soon be available for a variety of professions. The Realtor,



The Engineer, The Professor and others are coming soon to your local software dealer. Watch for a program perfectly suited to your professional needs. Ask your dealer for The Investor, or
ORDER TOLL-FREE (800) 682-2900.
MasterCard & VISA welcome.



MACINTOSH™

STOCKING STUFFERS

These two great new programs
from CDI will make perfect
Christmas Gifts

HomePak™ . . . 10 Useful Programs for the Home..... **\$39⁰⁰**

- | | |
|---------------------------------|-----------------------------|
| 1. Financial Calculator | 6. Home Inventory Record |
| 2. IRA Benefit Calculator | 7. Stock Record |
| 3. Checkbook Reconciliation | 8. Improved Alarm Clock |
| 4. Banner Maker | 9. New Puzzle |
| 5. Personal Financial Statement | 10. Desk Accessories Editor |

MacOffice™ . . . 10 Useful Programs for the Office..... **\$39⁰⁰**

- | | |
|-------------------------------|--|
| 1. Loan Amortization Schedule | 6. Statistics (mean, median, std. deviation) |
| 2. ACRS Depreciation | 7. Internal Rate of Return |
| 3. Lease vs. Purchase | 8. Bond Yield to Maturity |
| 4. Financial Calculator | 9. Calendar (days between dates, etc.) |
| 5. Scientific Calculator | 10. Desk Accessories Editor |

Be a Saint and put one (or both) of these programs in the Christmas stocking of your favorite MAC user. Just in the Nick of time for that perfect Christmas gift!!!

ORDER TODAY OR SEE YOUR DEALER!!

Creighton Development, Inc. 4931 Birch Street, Newport Beach, CA 92660
(714) 476-1973



TM — Homepak and MacOffice are trademarks of Creighton Development, Inc. Macintosh is a trademark licensed to Apple Computer, Inc.

Circle 95 on reader service card

Circle 64 on reader service card



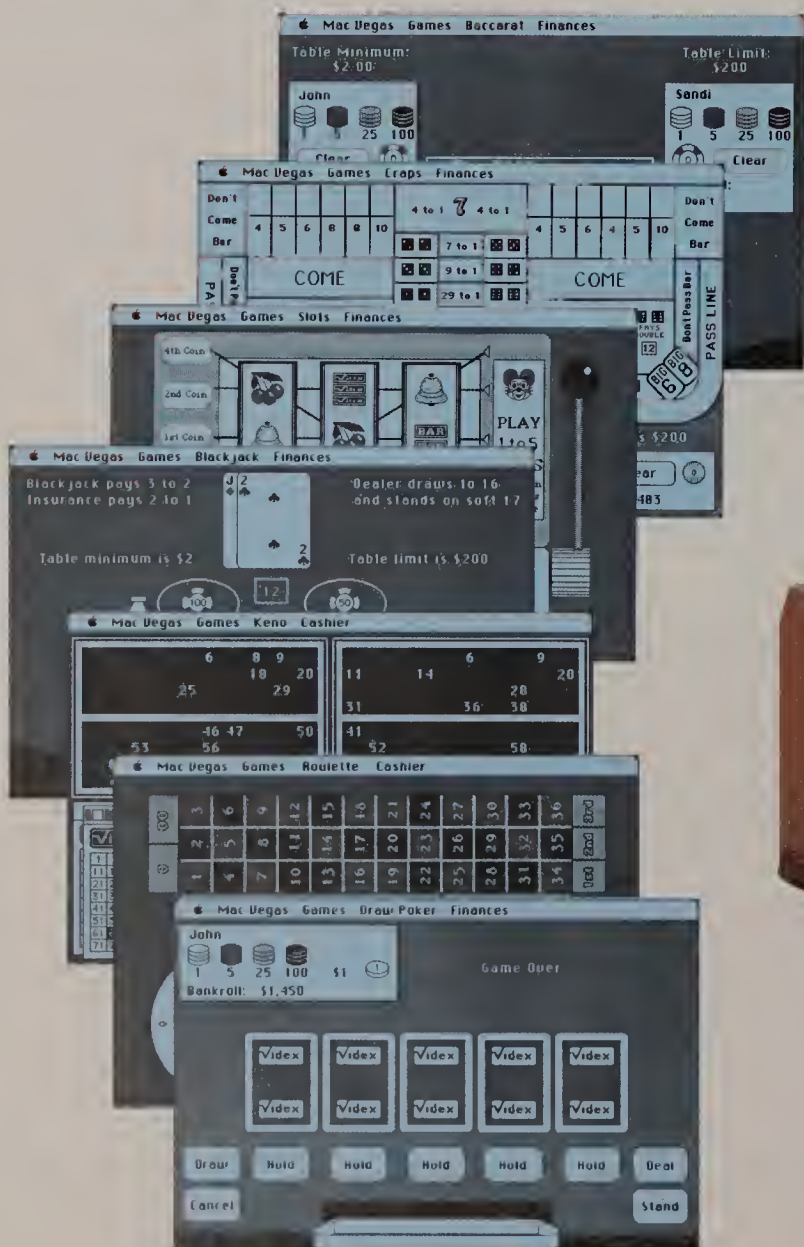
Catch that Las Vegas Fever MacVegas

Bring the excitement of the entertainment capital of the world right into your own living room. Challenge your gaming skills and play for high stakes with MacVegas. Become a Las Vegas high roller by doubling your odds on poker, blackjack and craps. Watch your numbers spin into focus while playing computerized roulette, slots and keno. Catch the Las Vegas fever with MacVegas, the newest sensation in high-quality games by Videx.

**Suggested Retail Price
\$59.00**



1105 N.E. CIRCLE BLVD.
CORVALLIS, OR 97330
503-758-0521



MacVegas is a trademark of Videx, Inc.
Macintosh is a registered trademark of Apple Computer, Inc.
The downtown Las Vegas, Nevada hotels and casinos
are not associated with this product.

Circle 42 on reader service card

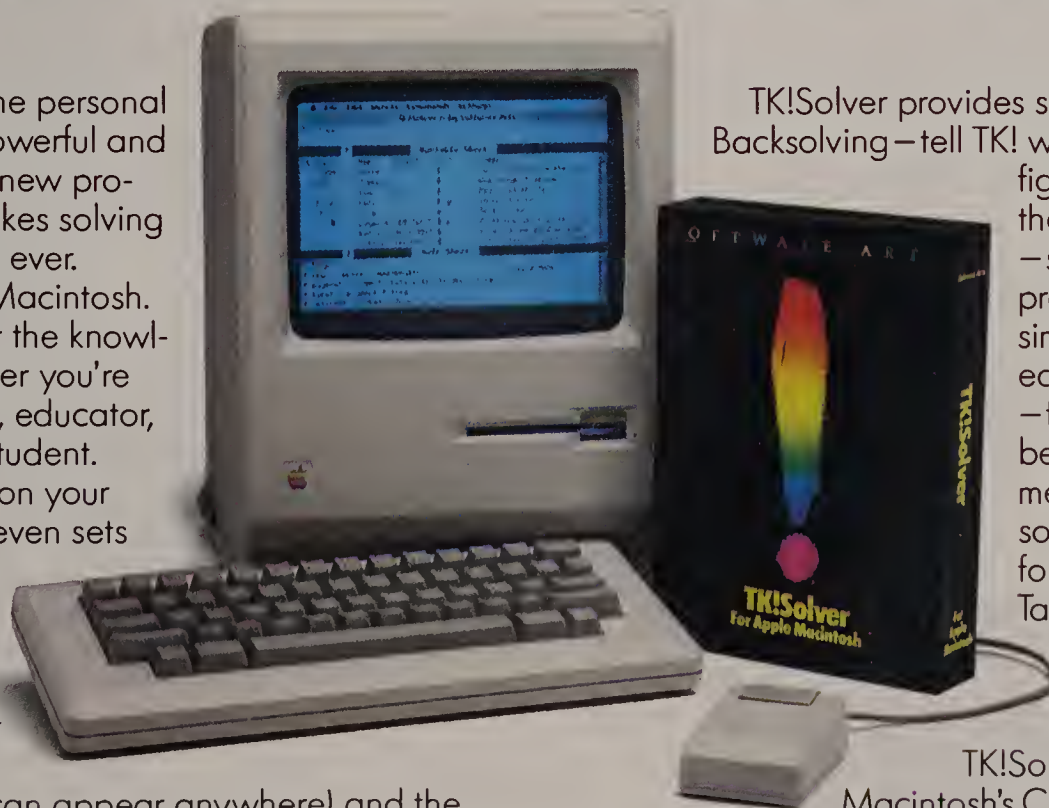
MAKE SHORT WORK OF LONG EQUATIONS

Introducing TK!Solver[®] for Apple[®] Macintosh[™].

An equation processing program that helps students and professionals solve even their most difficult problems.

For those who own the personal computer that's so powerful and easy to use, here's a new productivity tool that makes solving problems easier than ever. TK!Solver for Apple Macintosh. The complete tool for the knowledge worker—whether you're an engineer, scientist, educator, financial analyst or student.

Let TK!Solver take on your toughest problems—even sets of simultaneous non-linear equations. No matter how you're used to solving problems, just enter the equations (unknown variables can appear anywhere) and the known values. And click. You have the solution quickly. Without programming.



TK!Solver provides sophisticated features like Backsolving—tell TK! what you know, and it

figures out the way to solve the problem. Iterative Solving—successfully attack even problems involving sets of simultaneous non-linear equations. Unit Conversions—for automatic conversions between different units of measurement. List Solving—solving a model repeatedly for lists of input values.

Tables and High Resolution Plots—produce plots using symbols, lines or a combination of both.

TK!Solver takes full advantage of Macintosh's Cutting and Pasting, Pull-Down Menus, High Resolution Graphics, and also provides a friendly Help and Error Diagnosis System.

TK!Solver[®]
By Software Arts[™]

27 Mica Lane, Wellesley, Massachusetts 02181

Circle 79 on reader service card

You Chose the Right Computer Now Get the Right Carrying Case

Our bags are made of high quality, weather resistant Cordura,[®] padded with thick high density foam and Masonite.[®] This combination makes our bag the most durable and practical on the market.

MacPak[™]

The ideal campus and travel bag. Backpack straps hide in a full size zippered pocket in the back of the bag. Can be carried 3 ways. Room for manuals, 2nd disk drives, modem & numeric keypad.

Navy Blue, Grey, Burgundy
\$89.00 (add \$5.00 for shipping)

MacBag[™]

New design making it the most attractive and protective bag on the market. Compact, yet still room for 2nd disk drive, numeric keypad, modem and more. Ideal for the Accountant or Attorney.

Navy Blue, Grey, Burgundy
\$89.00 (add \$5.00 for shipping)

***MacSak[™]**

Same materials & construction. Carries computer, keyboard, mouse, manuals & more. Navy Blue, Tan, Burgundy
\$69.00 (add \$5.00 for shipping)

Print•Pak

Now designed to match most bags on the market. Very attractive and highest quality construction. 1" high density foam protects the Imagewriter.[®] Can attach to top of MacPak, carried by shoulder sling or like a briefcase. Grey, Navy Blue, Tan, Burgundy
Standard 11" **\$54.00** (add \$3.00 for shipping)
Legal 15" **\$64.00** (add \$3.00 for shipping)

***Mac•Accessory•Pak**

We call it "PiggyMac". Carries 2nd disk drive, modems, numeric keypad, manuals and gobs of paper in a neat little briefcase. Can be carried on top of MacSak, any bag - piggyback, or like a briefcase. Navy Blue, Tan, Burgundy
\$49.00 (add \$3.00 for shipping)

*Not pictured. Call for write for free brochure.

MacFreighter

A super case for shipping. Suggested retail is \$295.00, but we're selling direct at...
\$199.00 (add \$10.00 for shipping)

***Print•Freighter**

Same exact construction as MacFreighter, for Imagewriter.

11" **\$169.00** (add \$10.00 for shipping)

15" **\$179.00** (add \$10.00 for shipping)

***MacCover - Home:**

Beautiful vinyl clothbacked dust cover. Looks great at home or in the den. Aids in static prevention and kid protection. Black or Brown.

3 pc. **\$29.00** (add \$3.00 for shipping)

5 pc. **\$32.00** (add \$3.00 for shipping)

***MacCover - Office:**

Sleek covers made from 400 Denier rip stop nylon with a polyurethane backing. Perfect for the office because it can be stored in a small space. Protection from ashes, spilled liquids, dust and smoke. Grey or Tan

5 pc. **\$26.00** (add \$3.00 for shipping)

(Specify 11" or 15" carriage. Numeric keypad and 2nd disk drive can be purchased separately).

To order or information

1-800-228-7042

8:00 am to 5:00 pm Pacific Time

after hours orders only

1-800-227-3800 ext 241

or mail check, money order, MC,
VISA or AE to:

MacPacks

P.O. Box 3928, Kent, WA 98032

(WA residents add 8% sales tax)

Service Number

(206) 575-1180

Dealer inquiries welcome

PROMPT SHIPPING



- A - padded pouch for mouse
- B - open padded pouch for keyboard
- C - thick high density foam inside and out
- D - leather handle for better grip
- E - non-slip shoulder grip
- F - padded reinforced divider completely covers CPU screen
- G - open padded pouch for cables, disks and papers
- H - space for 2nd disk drive, modems & numeric keypad
- I - durable, weather resistant Cordura[®]
- J - zippered pocket in back holds manuals, books and papers



MacPacks

Carriers, Packs and Covers for the Macintosh[®]

Satisfaction Guaranteed. If for any reason, you are not satisfied with any item purchased, you may return it within 30 days for a complete refund. Waranteed against rips or tears for the life of the bag.

Circle 28 on reader service card

WE'VE TAKEN LAS VEGAS



And put it in a great new game for the Macintosh Computer!

One pull of the handle and you know this is the real thing.

MAC-SLOTS puts all the thrills and challenges of playing Las Vegas at your fingertips with two terrific games on one diskette.

Slot Machine with its spinning bells and fruit, its jackpots... and surprises.

Keno. The ultimate frenzied, flashing numbers game.

This isn't "just like the original," it's better! So, put your money where your mouse is.

See your Macintosh dealer for a demonstration. Or order direct. Call toll-free 1-800-235-6646, Ext. 561.

In California: Call toll-free 1-800-235-6647, Ext. 561.

MAC-SLOTS-\$77.77 plus tax & \$2 shipping. Mastercard and VISA.

Soft-Life Corporation, P.O. Box 647, Paramount, CA 90723. (213) 774-3054.

Macintosh and the Apple Logo are registered trademarks of Apple Computer, Inc.

Circle 22 on reader service card



Going to the Oracle to Make a Sale

Learn new sales techniques by taking a true/false test

Bill Grout

Mr. M. may be difficult for you to work with. He tends to be cynical and somewhat suspicious. Deal in a direct, straightforward manner to try to reduce his suspiciousness. You may experience his cynicism as unsettling and begin to worry. Have some confidence that you do know what you are talking about and do not become preoccupied by his cynical and suspicious attitude.

Mr. M. has a low threshold for anger, and, in fact, may appear to be angry before you even say anything. Do not let this scare you out of selling to the best of your ability. He may also be unpredictable, and therefore difficult to figure out. This will be difficult for you to deal with. Be patient with this person. Stay calm and avoid becoming upset.

The *Sales Edge* is a salesperson's oracle. As with all oracles, you'll have to judge for yourself whether its advice is the product of superior insight or specious reasoning. When you are faced with a potential new buyer, the developers of *Sales Edge* suggest that you turn to the program to determine how your personality and a client's personality are likely to interact and how to adjust your behavior to make a sale. *Sales Edge* advises you on how to approach the client during the crucial first moments of a sale, how to present information in the

worry about making sales more than most" to "I believe in the need for a strong national defense." From these clues, *Sales Edge* gathers enough information to judge the strengths and weaknesses of your character (see Figure 1).

The self-assessment is matched against an assessment you make of the sales prospect's personality traits. Assessing a potential buyer is as easy as taking a true/false test. Groups of adjectives are displayed on the Macintosh's screen, and you decide whether a particular adjective correctly describes your client. You decide whether a client is "conservative," "social," "flashy," "a hard bargainer," or even "hostile." The 50 adjectives span a range of common behavior traits (see Figure 2).

Although "lean" and "mean" aren't part of the parcel of client adjectives, they certainly describe *Sales Edge*'s rapid personality assessment process. Completing the rundown of 50 personality traits is supposed to take less than 4 or 5 minutes—an unquestionably small amount of time in which to understand a person's character. The rapid assessment feature may appeal to busy salespeople who don't want to complete lengthy tests just to get a little helpful sales advice. Needless to say, *Sales Edge* puts a lot of faith in your perspicacity.

Sales Edge puts a lot of faith in your perspicacity.

manner most acceptable to the prospect, and how to close the sale with techniques intended to secure a signature on the dotted line.

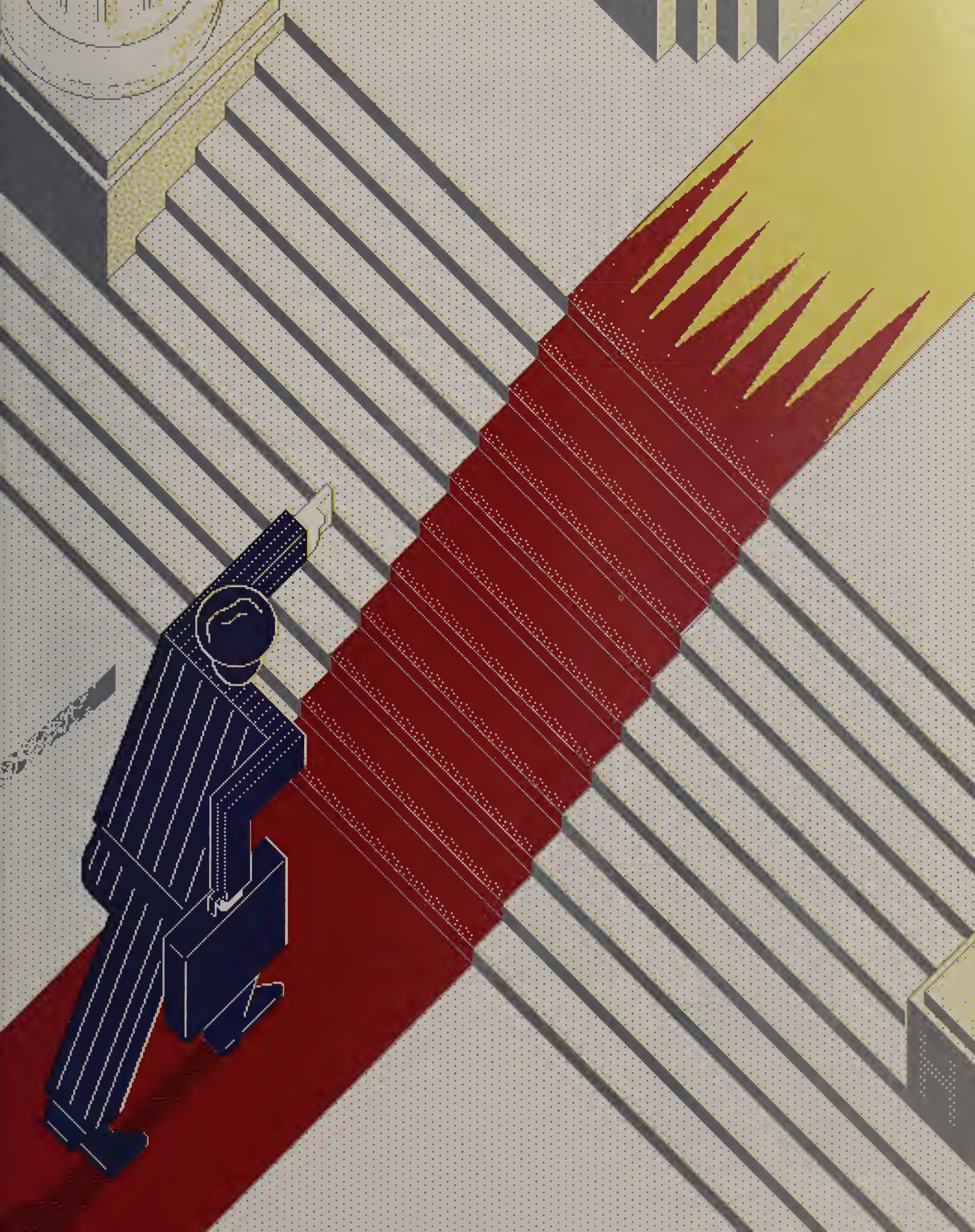
Customer Evaluation

For *Sales Edge* to guide you in a sales campaign, you must first supply information about your personality and that of the prospective client. From these observations, *Sales Edge* garners information to make judgments on how you should deal with the client.

Completing the self-assessment inspires the curiosity you feel when taking a *Reader's Digest* test. You simply agree or disagree with 86 statements about your personality. Statements range from "I

Sales Strategies

After you clue in *Sales Edge* about yourself and the potential buyer, the program manufactures a report from sales advice tailored by experts. No matter how ambiguous or complex the client's person-



Teleservice Telesupport

PRODUCTS FOR APPLE MACINTOSH	RETAIL PRICE	MICRO FLASH
Artsci MacPhone	\$ 199.95	\$ 170.00
Ashton-Tate dBase II	495.00	369.00
Assimilation Process		
Mac-Daisywheel Connection	99.00	75.00
Continental Home Accountant (Available October)	99.95	69.00
Oow Jones Software		
Straight Talk	495.00	376.00
Davong MacDisk 10 MB	\$2295.00	\$1700.00
Haba Software Habadex	200.00	159.00
Kensington Maccessories		
Starter Pack	70.00	59.00
Living Videotext Think Tank	145.00	110.00
Main Street Software		
Main Street Filer	249.00	189.00
Megahaus MegaMerge	125.00	95.00
MegaFiler	195.00	148.00
Microsoft Basic	150.00	122.00
Chart	125.00	99.00
Multiplan	195.00	148.00
Word	195.00	148.00
Novation		
Cat Communication Package	499.00	429.00
OCS Omnis 1	95.00	72.00
Omnis 2	195.00	148.00
Omnis 3	295.00	224.00
Prometheus Mac Pack includes Pro-Modem 1200, Cable & Software	495.00	425.00
Telos Filevision	195.00	148.00
Videx Software for Lisa		
Desktop Calendar	225.00	170.00

MANY OTHER PRODUCTS AVAILABLE! CALL AND DISCOVER
WHY OUR LOW PRICES, FAST SERVICE AND
WELL-STOCKED INVENTORIES HAVE MADE MICRO FLASH
THE CHOICE FOR CORPORATE BUYERS!

MICRO FLASH GUARANTEE: We sell the latest versions, we
support what we sell, and if a product is defective when
you receive it — we'll replace it!

MICRO FLASH TERMS & SHIPPING: MasterCard or Visa —
no extra charge. Call for information on purchase orders.
\$100 minimum order. Prices subject to change. UPS surface
\$6.00 (except printers and monitors). Add \$3.00 per item
for UPS 2nd Day Air. Call for information on foreign orders,
US Mail, COO's, & overnight delivery service. All shipments
fully insured at no extra charge.

For product information, price quotes,
technical support, please call

415/680-1157

To order from California, call

800/457-2433

To order from outside California, call

800/458-2433

Telex #353199 MFLASH UO



COMPUTER SYSTEMS, INC.

1110 BURNETT AVE., SUITES J & K
CONCORD, CA 94520

Member: Better Business Bureau
Chamber of Commerce
Listed: Dun & Bradstreet

Circle 3 on reader service card

File Edit Self

ASSESSING YOURSELF

AGREE DISAGREE

☒ ☐ I have more energy than others at work.

☐ ☒ A white lie is frequently a good thing.

☒ ☐ I would never quit one job unless I had another.

☒ ☐ I like to take responsibility for solving problems.

☒ ☐ I worry about selling more than most.

☐ ☒ Honesty is not an important part of selling.

☐ ☒ I enjoy sales because it involves working with groups of people.

☒ ☐ I would rather follow than lead.

Next Previous

Please check AGREE or DISAGREE for each item.

Figure 1

Before offering any advice, Sales Edge requires you to supply information about your personality and that of the prospective client. In the self-assessment, you agree or disagree with 86 statements contained in a series of dialog boxes, such as the one shown here.

File Edit Self

ASSESSING YOUR CUSTOMER

AGREE DISAGREE

☒ ☐ Talkative

☐ ☒ Apprehensive

☒ ☐ Autonomous

☒ ☐ Achieving

☐ ☒ Deferring

☐ ☒ Exhibitionistic

☒ ☐ Social

☐ ☒ Rigid

☒ ☐ Sarcastic

☒ ☐ Competitive

Next

Please check AGREE or DISAGREE for each item.

Figure 2

You complete the assessment process by deciding which of 50 adjectives, contained in a set of dialog boxes, correctly describe your client.

ality, *Sales Edge* conjures up concrete recommendations for your sales approach. Reports are divided into three sections and range from three to ten pages of advice that can be displayed on the Mac's screen or printed.

The first section of the report counsels you on how to act during the opening of a sale, which is when most prospects decide whether or not they will give you their attention (see Figure 3). If you're introverted and your client is gregarious, for example, *Sales Edge* may suggest you demonstrate that you "like" the client by showing a personal interest and giving compliments.

The second section of the report recommends techniques intended to keep the transaction on a successful track. *Sales Edge* might tell you that a client is most interested in exciting concepts, so your presentation should avoid unnecessary detail. The report might also advise you to encourage a "resisting" client to voice unspoken objections; once announced, the objections can be addressed and overcome.

The third part of the report tells you how to conclude the sale by suggesting two or three closing strategies. To close a sale, the program might recommend that you coax a client to describe the product

features he or she desires while you write them on a blank order form. When the client is finished, you wind up the sale by presenting the completed order form for the client's approval.

Program Design

Does *Sales Edge* provide good counsel? Is it a reliable and valid tool for sales professionals?

The president of Human Edge Software, James Johnson, claims *Sales Edge* is an expert system developed by a staff of psychologists and experts in the social sciences and business management. The information contained in *Sales Edge*, however, was not scientifically tested and analyzed. The sales strategies and advice were compiled by researching a wide spectrum of publications on sales and management. After gleaning pearls of sales wisdom from these works, the Human Edge staff matched the advice to likely models of interaction between different kinds of personalities.

For example, if a person who is outgoing and confident interacts with a person who is difficult to approach and inflexible, what should the outgoing person do? The Human Edge staff sifted through the sales

WHAT TO EXPECT

Mr. K.L. and yourself share some basic qualities. Both of you are willing to work long and hard to complete a task. Like yourself, Mr. K.L. attends to details well and is capable of doing precise work. Neither of you is particularly fond of socializing, and both of you work best when social demands are limited.

OK

CANCEL

Figure 3

This selection shows a small portion of the advice provided by *Sales Edge* in a sample sales report. Reports can be three to five pages long.

Just in time for Xmas!

Educational GAMES for

Macintosh

• **VOCABULARY ADVENTURE** encourages players to learn the meaning of new words as they wander through a castle visiting strange rooms and their even stranger inhabitants. Guaranteed fun for the entire family! Over 1,000 new vocabulary words are introduced during the playing of the game. Words are on Grade 6 - adult level. \$59.95.

• **HOW A BILL BECOMES A LAW** lets you become a Congressperson trying to get a bill passed in the United States Congress. Enjoy learning about the legislative system, lobbying, filibusters, subcommittees, quorums, House-Senate committees, motions to table, parliamentary procedure, senatorial courtesy, seniority, amendments, vetos and overrides. But be careful! One wrong step and your bill — and maybe even your seat in Congress, will be down the Potomac! \$59.95.

26 more educational games and tutorials AVAILABLE NOW FOR THE MACINTOSH! For information call Queue, Inc., 798 North Ave., Bridgeport, CT 06602. 800-232-2224.



800-232-2224

Dealer inquiries invited.

Circle 141 on reader service card

Put your money where your Mac is.

Do I buy an IRA or a CD this year? Is it better for me to buy or lease an automobile? How can I possibly save any money from our budget? How can I tell how my stocks are doing? It's April 14! Where do I begin? My baby is 4 months old and he's going to an Ivy League college. How can I pay for it?

These new Apropos financial planning programs insure that you get the most informed answers to these and other personal money management and investment questions. That's because each analysis has been proven in use by professional financial planners with experience in advising top executive clients of one of the country's leading financial institutions.

You run these programs yourself in conjunction with Multiplan®. Simply type in answers to the questions asked while Macintosh calculates the answers and displays them automatically.

Financial Planning Series (5 Analyses) \$95.00

1. Home Budget Planner—Prepares a personal budget, helps locate and reinvest excess cash.
2. 1984 Tax Planner—Prepares and calculates all Form 1040 and Schedule A (itemized deductions) entries.
3. Auto Buy vs. Lease Planner—Compares after tax costs of purchase vs. lease including business tax deductions.
4. Invest for College—Determines yearly investment and return required to fund a college education.

5. Life Insurance Planner—Determines the amount of insurance a family needs if one of the income earning spouse or parent dies.

Investment Planning Series (5 Analyses) \$95.00

1. Stock Portfolio Planner—Keeps complete records, prepares risk, tax and industry analyses.
2. Real Estate Investment Planner—Prepares a five-year analysis for a real estate tax shelter investment. Projects income, expenses, taxable income, before and after tax cash flow, estimated gain from sale and net present value for property.

Company Name	Industry	Date of Purchase	# of Shares	Purchase Price	Dividend per Share	Current Price	Beta
Apple	3	4/12/84	150	25.500	0.00	31.75	
Stock 2	0		0	0.000	0.00	0	

3. Investment Portfolio Planner—Records earnings and appreciation and produces a summary report to detect unbalanced or poorly performing portfolios.
4. IRA vs. CD Planner—Compares an IRA with a taxable CD to evaluate the best investment based on individual's tax situation.
5. Loan Planner—Prepares a five-year analysis of monthly payments, interest and principle on any loan for a major expenditure.

Coming December 1st— 1984 Complete Tax Planner \$49.95

Expanded version of the Tax Planner. Included is IRS Form 1040 and Schedules A, B, C, D, E, and SE. All tax and income tables are already written into the program.

Now you can become an expert on your own personal finances without hiring a professional to do it for you! So put your money where you Mac is and make the most of your money with Apropos Software.

These packages are available at computer and software specialty stores throughout the U.S. or directly from Apropos Software, Inc.

APROPOS



64 Hillview Ave. • Los Altos, CA 94022 • (415) 948-7227

For mail orders, include \$3.00 for shipping and handling. California residents add 6.5% sales tax.

information garnered from their research and decided what recommendations should be made. The report, then, is a combination of research and speculation applied to a hypothetical human interaction. The validity of *Sales Edge*'s design depends on whether you accept the "experts'" opinion.

Even if you believe that the program's design assumptions are sound, the weakness of *Sales Edge* remains in "the eye of the beholder." The appropriateness of the advice offered by the program depends heavily on how astutely you observe your client and yourself. After a 5-minute sizing up of a potential client, a salesperson may not always be perceptive enough to produce a reliable assessment. People also change; a prospect may be friendly on the day you form your first impressions but combative on the day you try to make a sale.

Regardless of the basis of the design of *Sales Edge* and the accuracy of your observations, you might be able to profit from the program's advice. The guidance provides a set of alternatives that can help you make decisions. In addition to the recommendations contained in the reports, the *Sales Edge* documentation provides information about the elements of sales and basic principles for success. The program is also useful because it helps you conceptualize future sales interactions.

Using *Sales Edge* might be an interesting and fun way for novices to learn new sales techniques and for pros to review familiar ones. It's likely, however, that after a short acquaintance with *Sales Edge*, salespeople will become disenchanted with its repetitious advice and consign the program to the shelf. □

▲▲▲▲▲▲▲▲▲▲ Bill Grout reviews software for the San Francisco Chronicle and is coauthor of Word Processing with the IBM PC.

▲▲▲▲▲▲▲▲▲▲
The Sales Edge
Human Edge Software Corporation
2445 Faber Pl.
Palo Alto, CA 94303
800/624-5227, in California
800/824-7325
List price: \$250

For a price, this team will consolidate, calculate, format, sort, merge, retrieve, rebuild and report your data.



For a song, so will this one.

Introducing the most efficient management team in the business. OMNIS 2 and your Macintosh.[™] Database software with the power to streamline your business. Now taking full advantage of Macintosh capabilities.

Like other good database programs, OMNIS 2 will help you organize information.

End similarity.

OMNIS 2 will calculate, arrange, store, sort, and retrieve your business data. Quickly. Update thousands of files all at once. Generate a complex report. Merge lists and letters. Help you make better decisions. All with a few clicks of the mouse. **Do it your way.**

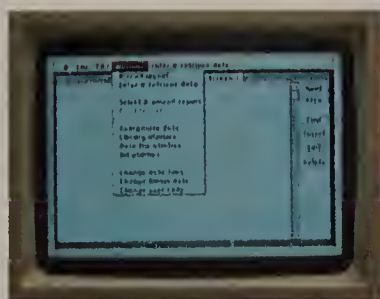
OMNIS 2's incredible flexibility lets you manage data your way.

Click. The mouse pulls down the menu. And you're ready to create a custom database layout for up to 9600 characters and up to 120 information fields. Character fields. Click. Numeric fields. Click. Date, boolean, and sequential fields. Click, click.

OMNIS 2 lets you designate a full

array of calculations in up to 60 numeric and date fields. It's fast—you can enter and retrieve information in an instant. Even with thousands of records to search. Click. And OMNIS 2 lets you integrate data using Mac's calculator, scrapboard, and clipboard.

Need to reformat your layout? Do it whenever you want to. Even after entering data. Need to update records? OMNIS 2 handles multiple updates with ease. It even guards against improper data entry.



OMNIS 2 takes full advantage of pull-down menus and many other Macintosh features.

Need more than a database program? This is it.

A powerful report generator.

Creating lists and reports is a snap. Click, click. Personnel reports. Inventory updates. Financial statements. Sales data. Mailing lists. Labels. Data-merged

letters and documents. All per your unique, exact requirements. And all transferable to Macwrite.[™]

OMNIS 2 will search using up to 50 fields at any one time, and sort data down to 9 levels. Complete with sub-

totals and up to 60 more calculations. Averages, "what if" scenarios. Whatever. **Upgrade to OMNIS 3.**

When you're ready to create your own applications programs—complete with custom menus—you can upgrade to OMNIS 3. It's an advanced relational/hierarchical program, supports up to 12 open files, and is file compatible with OMNIS 2.

If you don't own a Mac, the OMNIS family of database software is also available for Apple[™] IIe, Apple IIc, Apple II+, Apple III, Lisa,[™] IBM[®] PC and XT, Victor,[™] Sirius,[™] Apricot,[™] DEC Rainbow,[™] and more.

OMNIS 2, *The Information Manager*. Fully supported by OSC. And only \$195 to \$275 at your computer software dealer. Or order direct. Organizational Software Corporation, 2655 Campus Drive, Suite 150, San Mateo, CA 94403, (415) 571-0222.

OMNIS

Organizational Software Corporation

Circle 38 on reader service card

How to find a in a haystack.

Introducing Factfinder.

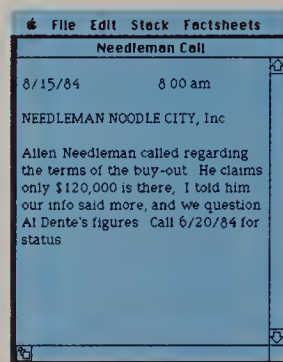
Now you can put your life in order, instantly, with one finger. All the inspired thoughts that would otherwise be lost. Names, dates, appointments, promises, lists, formulas, abstracts, references, notes.

Factfinder is a kind of electronic “desk-drawer” where you can just toss information without worrying about how it should be arranged or how you might want to use it. If it’s something—anything—you want to refer to again, you just put it in. Factfinder makes it incredibly easy to enter information. There are no fields to define, no formats to set up.

Then, when you need to find all the clients you have who hate olives or live in Denver; when you

want to collect your notes on pasta merchandising; when you need the name and number of that guy who’s looking for leveraged buyouts, it’s yours in a few seconds, at your index fingertip.

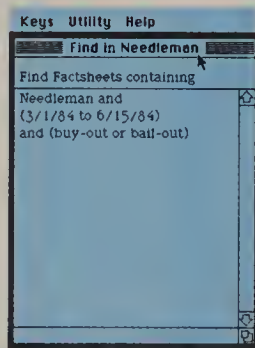
Let’s say you’ve had a significant



breakthrough on your project. (Or case, or campaign, or analysis.) You click Factfinder on, jot down the essentials on our electronic equivalent of a notepad

(which is always right where you want it and never runs out of paper or gets runny because somebody put coffee on it).

When you’ve finished keying in your notes on the Needleman Plan (or Needleman vs. Nardoff or the Needleman Noodles campaign) in any length you want, you click the mouse on a few key words—“fallout,” “bail-out,” “roll-out,” leveraged buyout,” “March 14,” whatever.

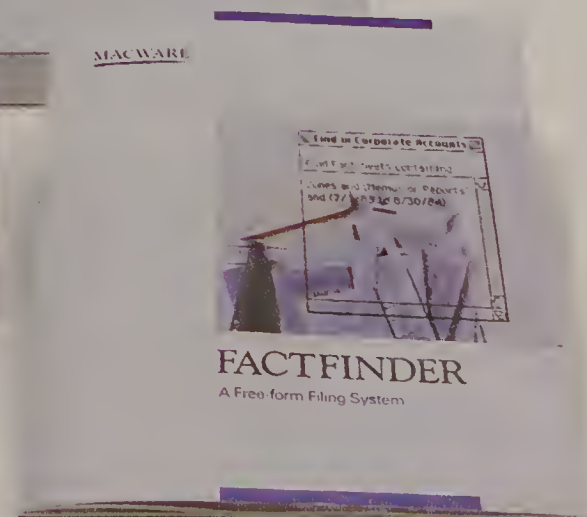
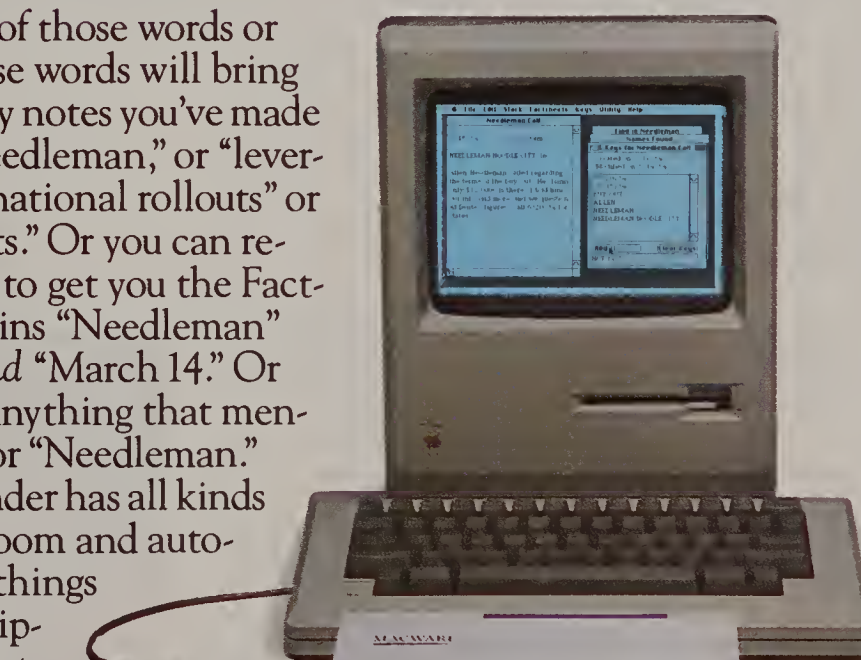


Needleman

Then, any of those words or even part of those words will bring you a stack of any notes you've made that include "Needleman," or "leveraged buyouts," "national rollouts" or miracle "bail-outs." Or you can request Factfinder to get you the Factsheet that contains "Needleman" and "bail-out" and "March 14." Or you can ask for anything that mentions "bail-out" or "Needleman."

And Factfinder has all kinds of features like zoom and automatic wrap and things to help you manipulate the heck out of your data, and make it whatever size and shape you want.

Contact your Macintosh™ software dealer for a demonstration, or call 1 800 MACWARE to find out where you can get Factfinder in your area. From Forethought, Inc.



MACWARE™

* * * **ALERT** * * *
ASK FOR NEW CHALLENGES
FROM PRIORITY SOFTWARE
AT YOUR DEALER
THIS MONTH!

YOU'VE PROCESSED YOUR WORDS, SPREAD
YOUR SHEETS, AND TESTED YOUR HAND-EYE
COORDINATION WITH ARCADE GAMES...

IT'S TIME

...to challenge your mind's eye
...to put some adventure in your life
with an Artext adventure from Priority Software.

Escape into the worlds of **FORBIDDEN QUEST**, an interactive science fiction adventure. Stimulating prose and five vivid graphic art prints combine to transform the adventure into REALITY. Lose yourself on a journey that will have you facing danger and challenges where your ability to think clearly and logically are your only defenses against failure and reward—death. You must succeed in your mission if the galaxy, as you know it, is to survive. You must travel through over 100 locations, mastering two starships and surviving three hostile planets in order to complete the quest—OR DIE.

YOU MAY NEVER PLAY AN ARCADE GAME AGAIN

"Forbidden Quest's plot is intriguing and has some of the appeal of an Andre Norton novel. This is a superior program."

Michael A. Banks, Softalk (Apple)

"The opening scene is as vivid as any opener I've played."

Scott Mace, Infoworld

"If you're a video-game enthusiast and have never played a text adventure before, you might want to give your reflexes a rest and look at this one."

Dian Crayne, Softalk (IBM)

"This is undoubtedly the most significant piece of software ever produced, or that will ever be produced, in the universe as we know it... honest!"

Pierre d'Avenas

Director of Marketing

Priority Software

PICK ONE UP AT YOUR LOCAL DEALER OR CALL
(408) 757-0125 FOR ORDER INFORMATION

ALSO AVAILABLE FOR
APPLE][(+)(e)(c, IBM-PC & PC JR. FOR \$39.95
MACINTOSH VERSION \$44.95

Priority
Software
INCORPORATED

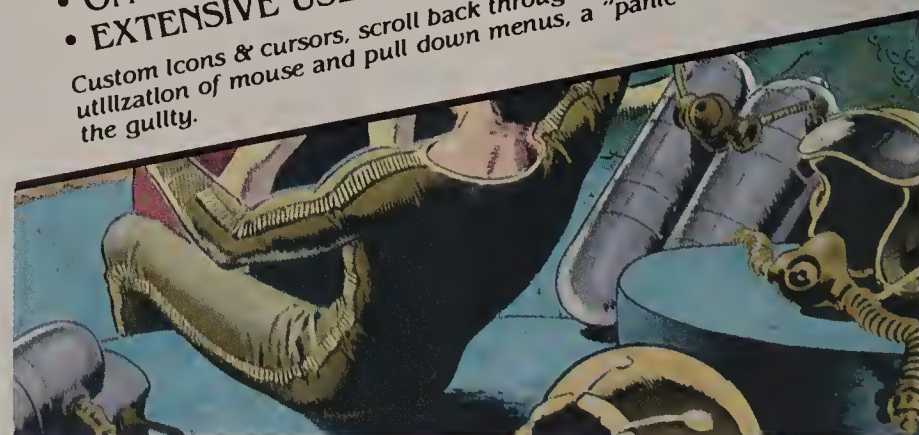
Adventures for the Mind

APPLE and IBM are registered trademarks of Apple Computer, Inc. and International Business Machines, respectively. **Forbidden Quest** and **ARTEXT** are trademarks of Priority Software, Inc. © 1983 Priority Software, Inc. All Rights Reserved.

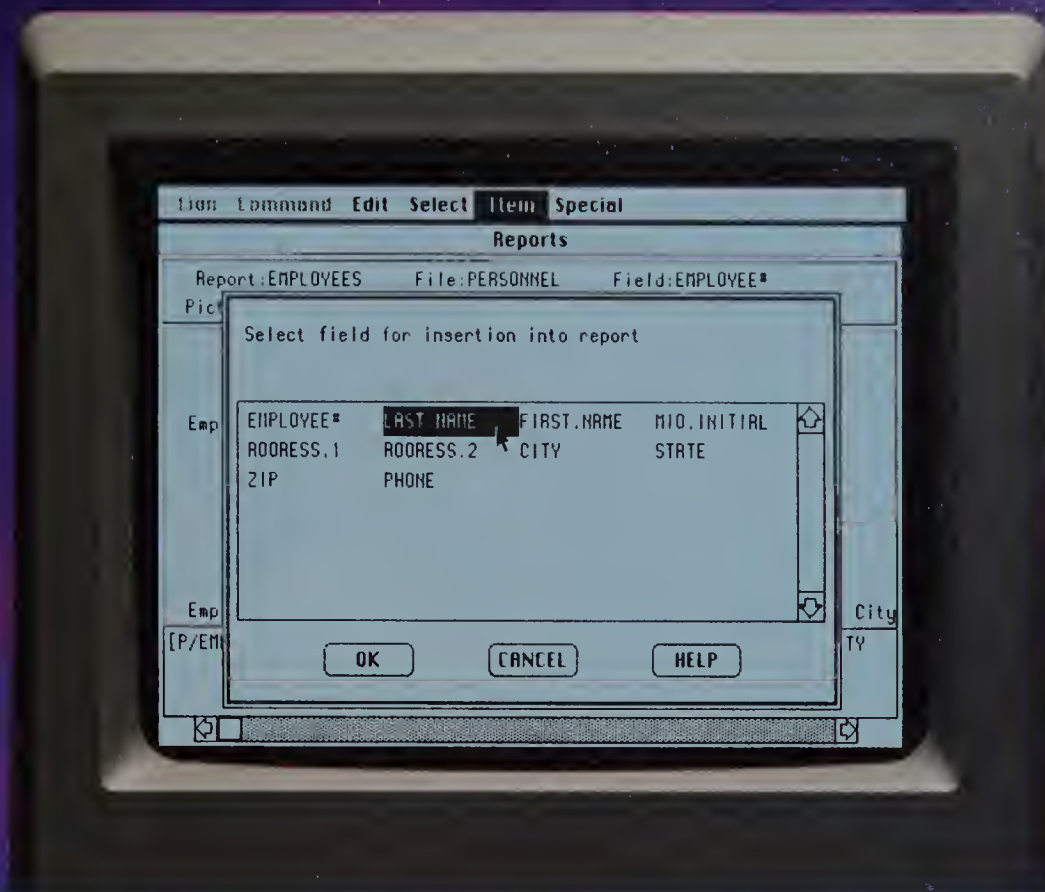
P.O. Box 221959, Carmel, California 93922



AVAILABLE FOR MACINTOSH NOW
• ON-LINE INSTRUCTIONS & MULTI-LEVEL HINTS
• EXTENSIVE USE OF MACINTOSH CAPABILITIES
Custom icons & cursors, scroll back through 5K of responses, extensive utilization of mouse and pull down menus, a "panic" button to protect the guilty.



DISTRIBUTED BY FIRST SOFTWARE, SOFTSEL, MICRO D, COMPUTERLAND CORP. AND OTHER FINE DISTRIBUTORS
Circle 127 on reader service card



A DATA BASE MANAGER SIMPLE TO USE NO MATTER WHAT YOU ASK OF IT.

Step by simple step, MacLion takes you wherever it is you need to go on your Macintosh.

The first time you use MacLion you can perform any number of functions. Set up simple lists such as customer orders, customer files, invoices, payroll information, parts files, employee details, or whatever your business needs. Then as time goes by and you want to build systems from your lists, MacLion accommodates you with equal ease. No matter what demands you make upon MacLion, it possesses both the power and flexibility to meet them with ease.

COMPLEXITY REDUCED TO SIMPLICITY

For example, the data dictionary lets you define all the fields you want then pick and choose from the dictionary to create a new file. Simply. Change any field's definition in the dictionary and with the push of a button change that field in all your files. Say goodbye to tedious repetition of inputting data. Organize data in a variety of ways, then retrieve what you need quickly, thanks to Mouse-assisted, pull-down menus. All so simple.

CONCEALED POWER REVEALED

Peek into the MacLion toolbox and you'll discover an editor for easy maintenance, an interpreter to maximize memory, a compiler for fast running, a report writer, and a powerful language for the professional. As your business grows, and with it the need for more sophisticated systems, MacLion reveals a whole new dimension of responses. Using MacLion's own powerful business-oriented programming language, you can create custom applications, set up sales orders, inventory, general ledger accounting, and run programs interactively. Even compile programs for speed.

Another big plus of MacLion: because it lets you write programs geared to the particular way your business is set up, you no longer need to sacrifice your

methods to preconceived, off-the shelf software. You tell MacLion what to do and your employees how to do it through the help mode. You can do all that and much more with MacLion. But no matter what you call upon MacLion to do for your business, from the first time you use it or ten years from now, it will answer the only way it knows how: simply.

PROUD PEDIGREE

Although Mac Lion is a new concept in data base management, its lineage is a proud one. CSD, the makers of Mac Lion, developed this product as a natural evolution of our years of experience in data base management systems on micros.



MONEY-BACK GUARANTEE

Compare Mac Lion with the competition and you'll see that its price tag of only \$379 is indeed modest.

That aside, if Mac Lion doesn't prove to be all we say it is, return it within 30 days and you'll receive a full refund. Without a growl.

Should you be unable to locate a dealer selling Mac Lion in your neck of the jungle, please call our toll-free number 1 (800) 252-LION or (714) 634-9012 and we'll supply the information. Or send your check directly to:

CSD COMPUTER SOFTWARE DESIGN INC

1904 Wright Circle, Anaheim, California 92806

©1984 Computer Software Design, all rights reserved.
Mac Lion and CSD are trademarks of Computer Software Design.
Macintosh is a trademark of Apple Computers.

Circle 66 on reader service card

✓ **Eliminate "Mousewrist"**

...and overall long run fatigue.

✓ **Improve Accuracy**

...No more jerky over/under shooting screen positioning.

✓ **Save Time**

...Lightning fast at pull-down menus and text placement. A must for Mac Draw.

New!

Besides— A friction laden (sticky) mouse detracts from the elegance and functionality of your Apple Lisa, Macintosh or IIc.

THE 100% SOLUTION IS

★ **PNEU-MOUSE** ★

A SLIPPERY, PNEUMATICALLY ELEVATED PLATFORM

For Your Mouse
...All for \$74.95 retail...

*THE PERFECT GIFT
New and Inexpensive*

*ACT NOW
Save Over 25%*



Pneu-Mouse shown with Apple† Macintosh†
† TM of Apple Computer, Inc.

ORDER NOW!

Pneu-Mouse Corporation
P.O. Box 125 · Boulder, CO 80306
303-449-5525
(If lines are busy please try again)

INTRODUCTORY OFFER: EXPIRES 12/31/84*

Factory Direct \$55 each (Freight Prepaid)
(Shipped Immediately w/Visa M.C. or Money Orders)
SOLD ON A MONEY-BACK GUARANTEE

*IN 1985 SEE YOUR LOCAL DEALER!

DEALERS NEEDED IMMEDIATELY · START-UP PROMOTIONS OFFERED

[illegible]

One connection.

What you see is what we've got.

MacConnection is pleased to announce a marketing principle so revolutionary, so breathtaking, so downright unusual that it will completely transform the Macintosh marketplace. Forever.

Are you ready? Hold on to your mouse.

We at MacConnection hereby declare, on our word of honor, that we will not advertise anything for the Macintosh until we have it in our hands.

Here today; yours tomorrow.

The products you see here are not dummies. They are not "coming soon." They are not "expected imminently." They are not programs for other computers that will soon be available for the Mac.

They are here today. They could be working in and around your Mac tomorrow. And since we wrote this ad, even more products have arrived. Call us for the latest information and the best prices.

SOFTWARE

ATI

MacCoach Training (Interactive teaching program for using the Mac. Two disks/handbook.) . . . \$49.

Ann Arbor Softworks

Animation Toolkit 1 (Create, edit, and animate pictures right on your Mac.) . . . 39.

Animation Toolkit 1 advanced version (All the features above plus sound.) . . . 54.

Creative Solutions

MacForth (Level 1) (Learn to program your Mac in "Forth". Define your own menus & windows.) . . . 99.

MacForth (Level 2) (Now you can get serious. Level 2 includes an assembler, floating point, and advanced graphics.) . . . 139.

Desktop Software

1st Base (File management and report writing program for use with MacWrite & MacPaint.) . . . 109.

Dow Jones

Straight Talk (Communications package for accessing on-line databases and other Macs and micros.) . . . 54.

1st Byte

Smooth Talker (Voice synthesis software for the Mac.) . . . 119.

Haba Systems

Habadex (Desktop management with address phone directory, appointments, travel expenses, phone dialer, database management, and mail-merge capabilities.) . . . 119.

Harvard Software

MacManager (Improve your strategic business skills with this simulation.) . . . \$35.

Hayden Software

Hundreds of design images that can be put into Mac's scrapbook, adjusted with MacPaint, and used in your own drawings. For professionals and amateurs.

DaVinci Buildings . . . 34.

DaVinci Interiors . . . 34.

DaVinci Landscapes . . . 34.

Human Edge Software

The Sales Edge (Helps prepare strategies for all aspects of sales negotiations.) . . . 169.

The Communications Edge (Identifies communications strengths and weaknesses.) . . . 89.

The Management Edge (Identify and evaluate management skills and discover methods for improvement.) . . . 129.

Mind Prober (Software that reveals people's hidden thoughts.) . . . 31.

Living Videotext

ThinkTank 128 (Put your ideas into ThinkTank and let your thoughts flow. The perfect idea organizer.) . . . 85.

Magnum

McPic (Volume I) (Create fancy memos, maps, logos, etc. with this collection of MacPainted drawings.) . . . 35.

McPic (Volume II) (150 new pictures.) . . . 35.

Megahaus

Megafile (Instant access to all your data. Print reports in a variety of formats.) . . . 139.

Megamerge (A mailmerge for Macwrite — generates form letters and mailing labels.) . . . 86.

Microsoft

Basic (The standard micro language — now available for the Mac.) . . . 99.

Chart (Business graphics program transforms numerical data into over 40 different graph styles.) . . . 89.

Multiplan (One of the most tried, proven, and popular electronic spreadsheets.) . . . 125.

Miles Computing

Mac the Knife (Nearly 500 illustrations — borders, icons, maps, etc. Use with MacPaint.) . . . 27.

Monogram

Dollars & Sense (Personal financial management program for your Mac.) . . . 84.

Organization Software

Omnis 2 (Information management system with global update/delete, user-defined records, mail merge, etc.) . . . 145.

Omnis 3 (Database management compatible with Omnis 2. Supports up to 12 open files.) . . . 219.

Proview Development

Overview (Database program with powerful math capabilities. Can sort 1000 records in 2 seconds.) . . . 185.

RealData, Inc.

Real estate and financial analysis templates. You must have Multiplan to use.

#1 Income producing real estate . . . 75.

#2 General financial analysis . . . 75.

#3 Commercial real estate development . . . 75.

#4 Residential real estate . . . 75.

Reston Publishing

Construction Estimator. (Calculates construction costs. You must have Multiplan to use.) . . . \$49.

Rio Grande Software

Softmaker II (Write your own Mac software. Well-documented, database program generator for both professionals and amateurs.) . . . 119.

Software Publishing

PFS:File (Powerful system for updating, recording, retrieving, and printing data.) . . . 79.

PFS:Report (Transfers PFS:File data into reports, according to your specifications.) . . . 79.

PFS:File & Report (Buy both and save.) . . . 125.

Softworks Limited

Softworks C (Turn your Mac into a C language development system.) . . . 279.

Stoneware

DB Master (Complete database management featuring on-screen prompts, browse capability, built-in report generator and more.) . . . 129.

T/Maker

Click Art Personal Graphics. (100+ drawings; cartoons, symbols, borders, famous people.) . . . 35.

Click Art Publications. (Graphics for newsletters, reports, invitations and more.) . . . 35.

Telos

Filevision (Store visual data along with relevant numbers and text. This unique graphic filing program lets you create a database out of whatever your mind can envision.) . . . 109.

Think Educational

Mind Over Mac (Five challenging games to develop mathematical & memory skills.) . . . 36.

Mac Edge (Learning programs in math and reading using graphics and games.) . . . 36.

GAMES

Blue Chip

Millionaire (Realistic stock market play. Start investing with \$10,000. Difficulty increases with success.) . . . 37.

CBS

Murder by the Dozen. (12 intricate mysteries. Work alone or in teams against rival detectives or the relentless clock.) . . . 29.

Datapak Software

Turn your Mac into a casino!

Mac-Slots (An electronic slot machine. Includes Keno.) . . . 49.

Mac-Jack (Electronic black jack.) . . . 27.

Mac-Poker (Electronic poker. Habit-forming when the chips are down.) . . . 27.

Expert Systems

MacGammon (Turn you Mac into a ruthless, sophisticated backgammon opponent. Sound effects and tournament scoring included.) . . . 39.

No hassle.

Industrial Components

Mac Puzzle (*Create your own jigsaw puzzles out of MacPaint drawings.*) \$27.

Infocom

You're a magician challenging the dungeon master, a detective solving a murder mystery, a scientist deciphering hieroglyphics, or just an ordinary mortal meeting the Wizard of Frobozz. Difficulty levels shown in italics.

Seastalker (*junior*) 27.
Zork I (*standard*) 27.
Enchanter (*standard*) 27.
the Witness (*standard*) 27.
Planetfall (*standard*) 27.
Zork II (*advanced*) 35.
Zork III (*advanced*) 35.
Infidel (*advanced*) 35.
Sorcerer (*advanced*) 35.
Deadline (*expert*) 39.
Starcross (*expert*) 39.
Suspended (*expert*) 39.
Invisiclues (hint booklets) are available for all Infocom games. Specify game. 7.

Mark of the Unicorn

Mouse Stampede (*Blow up the mice and watch them turn into cheese. Addictive.*) 23.

Mirage

Trivia (*Over 5000 questions, 5 categories, 3 difficulty levels. Find out what you know, thought you knew or never knew you didn't know. You know?*) 29.

Penguin

Pensate (*You can control the obstacles, but can you make it to the top of the grid?*) 24.
Transylvania (*Rescue Princess Sabrina in a desperate race against time, and beware of the creatures of the night.*) 24.

Priority Software

Forbidden Quest (*A truly challenging sci-fi adventure. Vivid graphic art prints.*) 27.

Scarborough Systems

Run for the Money (*Learn business skills to escape from a strange planet. Best with 2 players.*) .. 32.

Sierra On-Line

Frogger (*One of the classic arcade-type micro games. For 1 or 2 players.*) 27.

HARDWARE

Assimilation Process

Mac Daisywheel Connection (*Two disks, cable and set up guide for connecting Mac to a daisywheel printer.*) \$75.

Creighton Development

Proprint (*Software for connecting Mac to daisy wheel printer.*) 49.
Proprint w/8ft serial cable 74.
Proprint w/2 8ft serial cables & A-B switch 149.

Curtis Manufacturing

Diamond (*Switched 6 outlets*) 39.
Emerald (*Switched 6 outlets; 6 ft cord*) 49.
Sapphire (*Switched 3 outlets; EMI/RFI filtered*) 59.
Ruby (*Switched 6 outlets; EMI/RFI filtered; 6 ft cord*) 69.

Davong

Mac Disk call

Elephant

Imagewriter Ribbons. (*For superior Imagewriter printing.*) 5.

Kensington

Swivel (*Lazy Susan style base for your Mac.*) 23.
Surge Suppressor (*Replaces Mac's power cord and protects from surges and line noise.*) 39.
Dust Cover (*Covers both Mac and keyboard.*) 10.
Starter Pack (*Swivel, surge suppressor & dust cover in one package. Best buy.*) 54.
Disk Case (*Holds 36 Mac disks.*) 23.
Modem (*A 300 baud portable modem. Complete with cases and cables. 5 year warranty.*) 99.

Innovative

Flip & File (*Holds 40 Mac disks.*) 23.

Micron Technology

MicronEye (*Image sensor translates anything it sees into MacPaint for enhancement, printing, or storage. Let your Mac see what's going on.*) ... 329.

Pacific Wave

Flip Sort Micro (*Holds 40 Mac disks.*) 17.

BASF

Disks 3 1/2" Micro Floppy (*Box of 5*) 18.

MAXELL

Disks 3 1/2" Micro Floppy (*Box of 10*) 35.

Memorex

Disks 3 1/2" Micro Floppy (*Box of 10*) 39.

3M

Disks 3 1/2" Micro Floppy (*Box of 10*) 39.

Intermatrix

Macphone (*The complete computer phone, with clock calendar, memo pad and auto dial. Keeps detailed log of the length of all calls.*) 169.

Microsoft

Apple-Mac Book (*The much-acclaimed Mac reference book. An instant classic.*) \$14.

Presentation Graphics Book (*For getting the most out of Microsoft Chart.*) 14.

MacWork/MacPlay (*Twenty original ideas for home and business. See what's really possible between you and your Mac with MacWrite, MacPaint, and Multiplan.*) 14.

Optimum

MacTote. (*Sturdy, well-padded bag for the Mac, mouse, drive, and keyboard, and accessories. Reinforced bottom.*) 69.

Tecmar

Mac Drive (*10 megabytes fixed hard disk or 5 megabyte removeable hard disk.*) call

OUR POLICY

- We accept VISA and MASTERCARD.
- No surcharge added for charge cards.
- Your card is not charged until we ship.
- If we must ship a partial order, we never charge freight on the shipment(s) that complete the order.
- No sales tax.
- All shipments insured; no additional charge.
- Allow 1 wk for personal & company checks to clear.
- COD max. \$1000. Cash or certified check.
- 120 day guarantee on all products.*
- To order, call us anytime Monday thru Saturday 9:00 to 5:30. You can call our business offices at 603/446-7711.

SHIPPING: Continental US: Add \$2 per order for UPS surface, \$3 per order for UPS 2nd-Day-Air. We particularly recommend 2nd-Day-Air if you live west of the Mississippi or south of Virginia. It will only cost \$1 more and will save you up to four days on delivery time.

Outside Continental US: We add freight charges to credit card purchases. For prepayment, call 603/446-7711 for information.

425C

1-800/Mac&Lisa

MacConnectionTM

MacConnection, 14 Mill Street, Marlow, NH 03456 603/446-7711

©Copyright 1984 Micro Connection, Inc. MacConnection is a division of Micro Connection, Inc. MacConnection and Micro Connection are trademarks of Micro Connection Inc. Lisa is a registered trademark of Apple Computer, Inc. Macintosh is a trademark licensed to Apple Computer, Inc.

*Defective software replaced immediately. Defective hardware replaced or repaired at our discretion. Some items have warranties up to five years.

Circle 4 on reader service card

Macware News

The latest developments in Macintosh software, hardware, and accessories

Edited by Erfert Nielson

Macware News announces new Macintosh products. Those listed here are available now or will be in the near future. We will keep you informed of developments as the number of products for the Mac increases.

Software

■ Applications Unlimited

**18234 E. Nassau Dr.
Aurora, CO 80013-3346
303/699-0441**

MacGAS

A glossary and spelling checker that includes antonyms and synonyms. You install the program on a MacWrite disk and choose SpellChec to check a single word or DocChec to check spelling throughout a document. When the correctly spelled word is displayed, you can select it with the mouse and drag it over the incorrect word. If you are creating a document on a single-drive Mac, MacGAS has access to approximately 20,000 words; if you are using a two-drive system, it has access to approximately 80,000 words. You can, however, load and use the 80,000-word dictionary on a single-drive Mac when you are checking an entire document. List price: \$99.95.

■ Assimilation Process

**20833 Stevens Creek Blvd.
Cupertino, CA 95014
408/446-0797**

Mac Spell Right

A spelling checker that you can transfer to disk-based MacWrite and select from the menu bar. When used with a single-drive Mac, Mac Spell Right provides a dictionary with approximately 10,000 word roots. When used with a two-drive system, the program has access to a 30,000-word dictionary and a thesaurus. Since the spelling checker is installed in MacWrite, you can check words while you are typing a document, as well as search a finished document for spelling errors. Mac Spell Right automatically inserts correctly spelled words. List price: \$89.

■ Brock Software Products, Inc.

**8603 Pyott Rd., Box 799
Crystal Lake, IL 60014
815/459-4210**

Brock Keystroke

A data base and report generator with a cross-reference feature that permits you to access information from one file while working on another. The infor-

The screenshot shows the Brock Keystroke software interface. At the top is a menu bar with options: File, Edit, Update, Print, Copy, Merge, Delete, Enhance, and Info. Below the menu bar is a window titled 'Brock File'. The main area is divided into two columns. The left column contains fields for 'Customer #2074' and 'Accounts Receivables Fi'. Below these are 'Ship to' and 'Bill to' sections, each with fields for Company, Address, City, St., and Zip. The right column contains a 'Set Defaults' menu with options like Set Key_fields, Validate-Cross Reference, Computed Fields, Passwords, Phone, Date, Auto Date, Auto Increment, and Social Security. Below the menu is a 'Yes - No' option. The bottom of the window shows a status bar with '1 Add', 'Record 1', and buttons for 'Select', 'Accept', and 'Cancel'.

Brock Keystroke, Brock Software Products

mation from the cross-referenced file appears in the appropriate spot in the new record, so you don't have to enter it from the keyboard. A find/update function enables you to find information in any field or combination of fields.

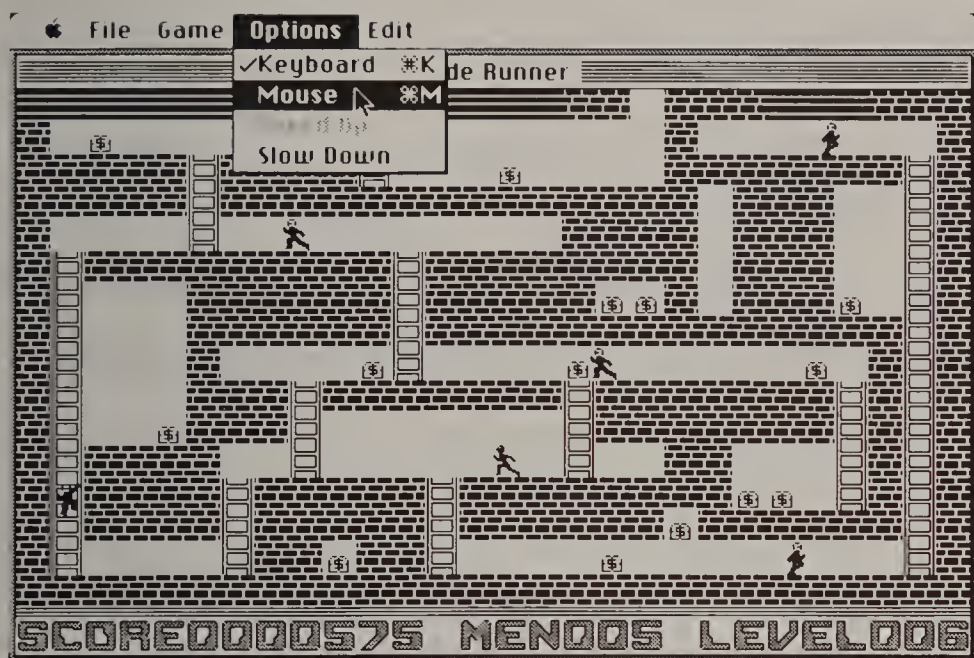
Other features include field formatting, help menus, automatic repeat fields, computed fields, and passwords. The report generator includes flexible formats, highlighting, and computed columns. With it you can also sort information and print mailing labels. List price: \$395.

■ Broderbund Software, Inc.

**17 Paul Dr.
San Rafael, CA 94903
415/479-1170**

Lode Runner

An arcade-style game that pits a galactic commando against a gang of guards in a quest to recover stolen chests of gold from the Bungeling Empire's treasury. Each of the game's 150 playing screens represents a different room in the treasury. The galactic commando must evade the guards while he runs, jumps, and climbs through the rooms, picking up chests as he goes. Lode Runner has a built-in game generator that lets you create custom



Lode Runner; Broderbund Software

playing screens by "painting" game elements across the screen with the mouse. You can play using either the keyboard or the mouse. List price: \$39.95.

■ CE Software

801 73rd St., Dept. M
Des Moines, IA 50312
515/224-1995

Desk Accessory Mover

A program that allows you to manipulate the Mac's desk accessories (the Scrapbook, Alarm Clock, Note Pad, and the other choices in the Apple menu). With *Desk Accessory Mover*, you can remove unwanted desk accessories to save disk space, copy desk accessories to files for storage, rename accessories to personalize your screen display, and move desk accessories to other disks. Two additional desk accessories—the Executive Decision Maker and the FRP (Fantasy Role-Playing) Die Roller—are included on the disk. List price: \$15 (contact CE Software for distribution information).

■ DataViz, Inc.

P.O. Box 1319
Norwalk, CT 06856
203/866-4944

MacLink

A program that transfers data between a Macintosh application and a comparable application on an IBM PC or PC-compatible computer. For example, *MacLink* can convert *Lotus 1-2-3*, *VisiCalc*, or *Multiplan* spreadsheets from the PC version to the Macintosh version of *Multiplan*. The program can also move word processing files from the PC into *MacWrite* or convert BASIC programs into Microsoft BASIC.

MacLink's "data bridges" work in either direction (Mac to PC or PC to Mac) using a modem or cable connection. Communications features permit the Mac to be used as an ASCII terminal for communicating

with other personal computers, mainframe computers, and on-line information services. List price: \$95 (\$125 including an 8-foot interface cable).

■ DNA, Inc.

9207 McAfee Dr.
Houston, TX 77031
713/778-9270

MacGraphics

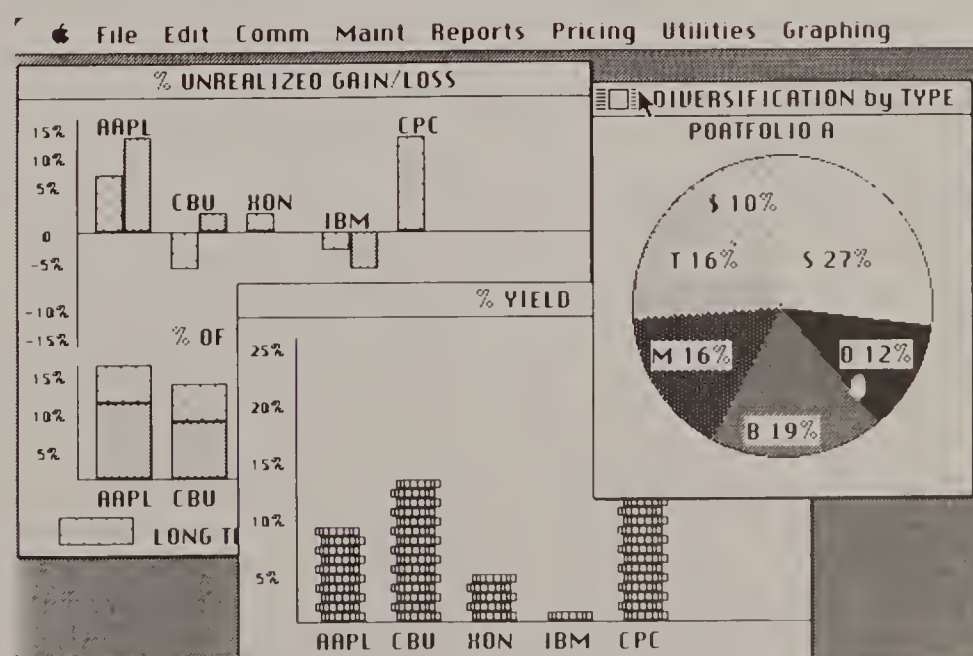
A disk containing pictures that can be pasted into *MacPaint* or *MacWrite* documents. Volume 1 includes a variety of graphics and borders, plus patterns that can be inserted into *MacPaint*'s pattern palette. The manufacturer plans to include graphics, fonts, and animated games in future volumes. List price: \$24.95.

■ Dow Jones Software

P.O. Box 300
Princeton, NJ 08540
800/257-5114, 609/452-1511

Market Manager PLUS

A program that maintains up to 26 stock portfolios and can keep up to 500 open positions. Used in conjunction with the Dow Jones News/Retrieval service, *Market Manager PLUS* automatically assigns prices to your portfolios from the Dow Jones Current Quotes data base. The program's features include comprehensive tax-lot accounting, full commission accounting, automatic dividend distribution, automatic stock split routines, and graphic presentation of portfolios. *Market*



Market Manager PLUS, Dow Jones Software

Manager PLUS automatically alerts you when a security price reaches your critical buy or sell level. The program includes a Dow Jones News/Retrieval membership and one hour of free use. List price: \$199.

■ **ExperTelligence**

**559 San Ysidro Rd.
Santa Barbara, CA 93108
805/969-7874**

ExperLogo

A version of Logo that uses Macintosh features such as pull-down menus, multiple windows, and the mouse. Since ExperLogo is a compiled Logo, it runs faster than previous versions of the language. ExperLogo can be used to introduce children to programming, and additional features increase Logo's potential as a program development language. In addition to the standard "turtle graphics," ExperLogo has "bunny graphics," which respond to 3-D navigation commands such as ROLL, PITCH, and YAW, and can traverse the surfaces of spheres on the screen. Procedures are stored on disk and loaded on call, so ExperLogo programs are not limited to 128K of memory. ExperLogo can process items and lists using arrays, which are useful for storing numeric information. List price: \$149.95.

■ **Owl Software**

**79 Milk St. #1108
Boston, MA 02109
800/343-0664 ext. 5500**

Soft Start

A series of *Multiplan* worksheets and *MacPaint* documents designed for personal and business use. The Personal Finance volume contains Budgeting, Stock and Bond Portfolios, Basic Property Management, Cash Flow, Net Worth, Checkbook and Credit Card Balancing, and Mortgage Analy-

sis worksheets. The Business Analysis volume contains Cash Flow, Income Statement and Balance Sheet Analysis, Receivables and Payables, Payroll Schedules, and Breakeven Analysis worksheets. The volume of predrawn business forms contains Invoices, Statements, Purchase Orders, Payable Vouchers, Payroll Register, Inventory Control, Telephone Message, and Planning Calendars. List price: \$49.95 per volume.

■ **Palantir Software**

**7701 Wilshire Pl. #110
Houston, TX 77040
800/368-3797, 713/939-1488**

MacType

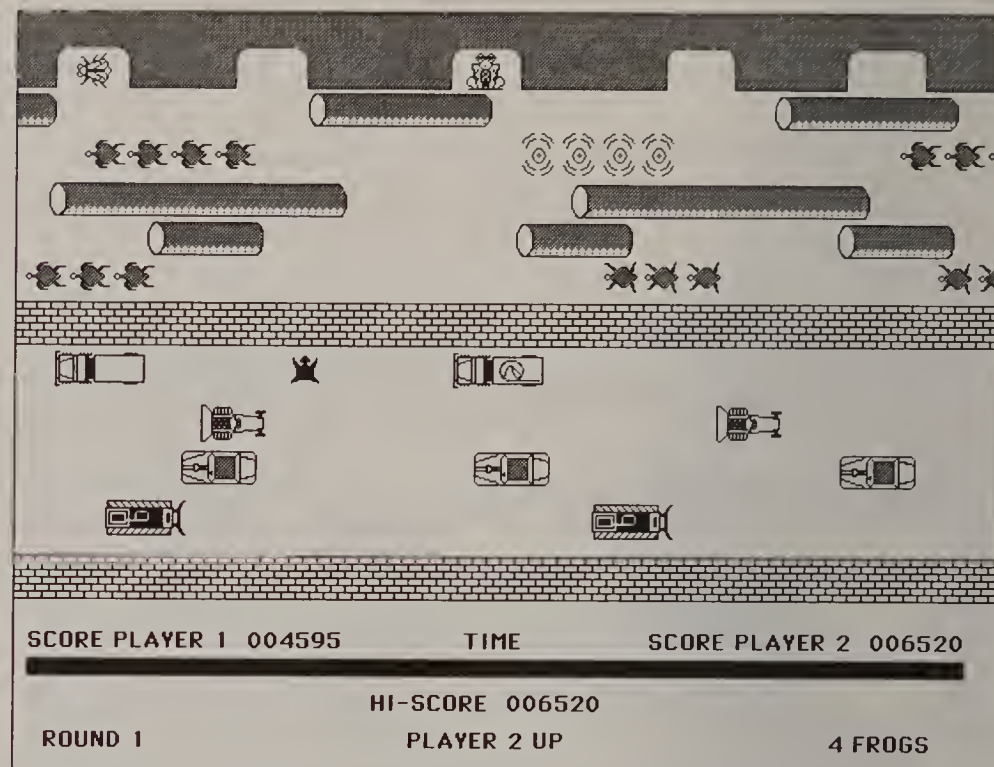
An interactive typing tutor program that teaches touch typing for QWERTY, Dvorak, and extended character set keyboards. For the beginner, *MacType* teaches basic keyboard layout and typing techniques. At the intermediate level, the program improves efficiency; at the advanced level it helps increase speed. *MacType* is self-paced and prompts you for testing once specific achievement levels are reached. Tests are scored for both speed and accuracy. Performance scores for several students can be stored on a single disk. List price: \$49.95.

■ **Shaherazam**

**P.O. Box 26731
Milwaukee, WI 53226
414/442-7503**

MusicType

A program that provides a musical notation font that enables you to use the Macintosh as a music typewriter. You enter a note and the accompanying staff lines with a single keystroke. You can also add lyrics, chord symbols, and other embellishments. The program allows you to edit your scores with *MacPaint*'s editing features. List price: \$49.95.



Frogger, Sierra On-Line

■ **Sierra On-Line**

**P.O. Box 485
Coarsegold, CA 93614
209/683-6858**

Frogger

An arcade-style game in which you maneuver a frog across a highway teeming with speeding cars and trucks and then across a river filled with floating logs. Points are awarded when a frog reaches the safety of the opposite shore. You use the mouse to move the frog. List price: \$39.95.

■ **SofTech**

**Microsystems, Inc.
16885 W. Bernardo Dr.
San Diego, CA 92127
619/451-1230**

Software Development Systems

SofTech's UCSD Pascal Development System gives programmers access to mouse, graphics, and font ROM routines, enabling applications to take advantage of the Mac's user interface. UCSD Pascal and Apple Pascal are sufficiently compatible to allow porting of Apple II

and Apple III programs to the Macintosh. UCSD Pascal programs running on other machines, such as the IBM PC, can also be ported.

The FORTRAN-77 Development System provides an ANSI-77 subset of FORTRAN with support for structured programming and improved character types.

The Advanced Development Toolkit augments the software development environment provided with UCSD Pascal and FORTRAN-77. The Toolkit includes source code for graphics/mouse interfaces, a symbolic debugger, a 68000 assembler, and a linker. List price: UCSD Pascal \$195, FORTRAN-77 \$295, Toolkit \$150.

■ **Superex Home Software**

**151 Ludlow St.
Yonkers, NY 10705
800/862-8800, 914/964-5200**

Home Executive

An integrated software package that consists of nine programs designed for home use. Each program includes a report generator. The Financial Analyst program consists of four sub-

programs that determine monthly payments on a fixed-rate loan or mortgage, calculate compound interest, determine how large an initial investment to make in order to withdraw a certain amount monthly, and calculate how much an initial investment will be worth at a future time.

The Portfolio Manager records investment transactions and automatically calculates net gains and losses. Another program, Expenses, generates itemized payments that you can attach to tax returns. The Address Book program allows you to store up to 3000 entries and print copies with the report generator. Also included are Appointment Book/Calendar, Checkbook, Collector's List, Gift List, and Household Inventory applications. List price: \$89.95.

■ **Trivial Compute Company**

**3527 Oak Lawn #179
Dallas, TX 75219
214/559-4233**

Trivial Compute, World Class Edition

A game that presents multiple-choice trivia questions in categories such as International Sports and Resorts, Lifestyles of the Rich and Famous, Royalty,

and Celebrities. The game has three levels of difficulty and may be played by one to six teams or individuals. List price: \$44.95.

Hardware

■ **Assimilation Process**

**20833 Stevens Creek Blvd.
Cupertino, CA 95014
408/446-0797**

Mac Turbo Touch

A device that attaches to either side of the Macintosh keyboard and performs the same functions as the mouse. You roll a tracking ball on top of the device to move the pointer, and press or click one of the two buttons beside the tracking ball as you would the mouse button.

According to the manufacturer, Mac Turbo Touch speeds up text entry because you don't have to take your eyes off the screen while looking for the mouse. Also, you don't have to move your hand far from the keyboard to select text or commands. Since you manipulate the tracking ball with your fingers, Mac Turbo Touch provides a more direct means of cursor control than does the mouse. Mac Turbo Touch is attached to the keyboard with Velcro and connected to the Mac's mouse port. List price: \$129.

■ **Koala Technologies Corp.**

**3100 Patrick Henry Dr.
Santa Clara, CA
95052-8100
408/986-8866**

MacVision

A digital imaging system that enables you to display and save a digitized picture on the Mac's screen. The system consists of two components. The first component is a hardware interface, which is attached to the Mac's modem port and to a video camera or videocassette recorder. The second component is a disk that allows you to install MacVision as a desk accessory in the Mac's Apple menu.

To operate MacVision, you select Camera from the Apple menu. The program scans the video image and you adjust the brightness and contrast; both a single scan and a repeat scan option are available. When the image is satisfactory, you can save it as a document and re-touch it with *MacPaint* before printing it out. Images are displayed at a resolution of 320 by 240 dots in the MacVision window. List price: \$349 (camera not included).

■ **Quark Incorporated**

**2525 W. Evans #220
Denver, CO 80219
303/934-2211**

QC10 Hard Disk

A 10-megabyte mass storage system that allows you to divide data into a number of volumes, each of which can be password-protected. The QC10 is also compatible with the Apple IIc, Apple IIe, and Apple III. List price: \$1995.

■ **Technological Services Company**

**P.O. Box 2125
Clinton, MS 39056
601/924-3304**

MSI-1

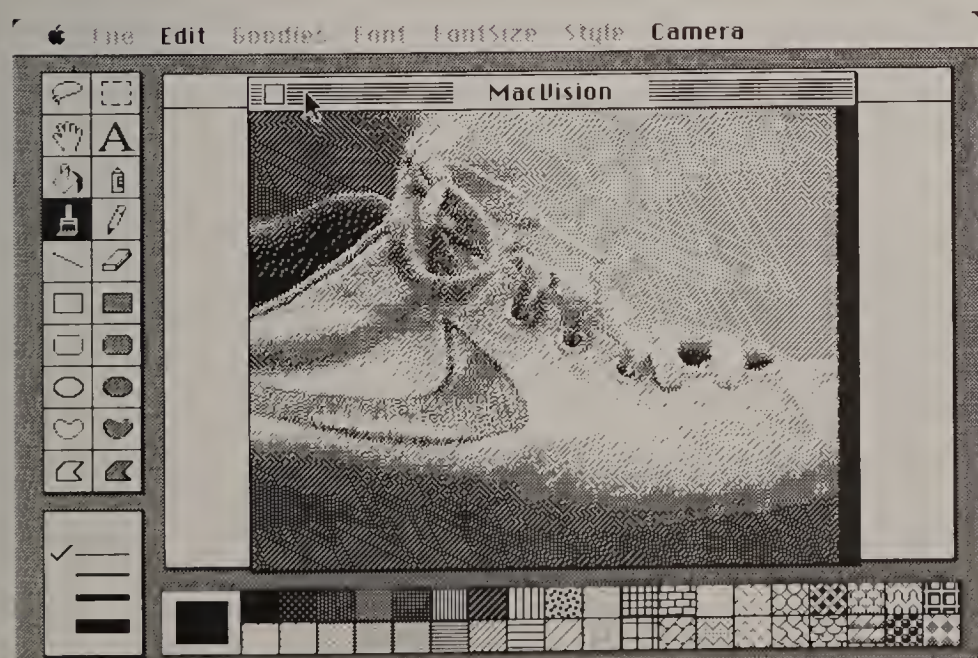
A high-speed interface from the Mac's serial port to the STD Bus. The MSI-1/STD connection allows you to connect the Mac to a variety of peripherals (D/A and A/D converters, color monitors, or video digitizers, for example). The MSI-1 package includes the MSI-1 computer card, a manual, a disk containing communications software, and a list of STD expansion products. It also includes SOFTPANEL.EX, a software package that enables you to control and monitor motors, lights, fans, and other devices. List price: \$350.

■ **Visionary Electronics, Inc.**

**141 Parker Ave.
San Francisco, CA 94118
415/751-8811**

Visionary 1200

A stand-alone personal computer communications and networking device that combines the capabilities of a direct-connect modem with an electronic mail, Telex, and TWX communications station. The Visionary 1200 contains its own microprocessor and communications software. You can transmit and receive data while using the Macintosh for other tasks, or even when the computer is turned off. The Visionary 1200 operates at 1200 and 300 baud and is compatible with Bell 212A and 103 series modems. It comes with two RS-232C ports, two telephone jacks, and a clock/calendar. List price: Visionary 1200 with 2K of memory \$795, each additional 16K of memory (up to 48K) \$100.



MacVision, Koala Technologies

Accessories

■ **Diversions, Inc.**

**1550 Winding Way
Belmont, CA 94002
415/591-6739**

Underware

A ribbon that lets you make *MacPaint* drawings into iron-on transfers for T-shirts. You draw an image in *MacPaint*, flip it horizontally, replace the Imagewriter's ribbon with the Underware ribbon, and print the drawing on standard paper. You can then transfer the image onto a T-shirt using an iron. List price: \$19.95.

■ **Eqtron Corporation**

**330 Bay St. #1115
Toronto, Ontario
Canada M5H 2S8
416/361-5002**

Anti-Glare Screen

A fabric screen that is designed to reduce glare and minimize eyestrain by absorbing the light from overhead lights or sunlight that is reflected from the Mac's screen. The Anti-Glare Screen is attached to the Mac's screen with double-sided tape. Each package includes a special cloth with which to clean the screen. List price: \$34.95 in Canada, \$26.95 in the U.S.

■ **Fiberbilt**

**601 W. 26th St.
New York, NY 10001-1199
212/675-5820**

Mac-Mover

An 8½-pound, 20-inch by 12-inch by 16-inch hard case with a padded interior and separate compartments for the Macintosh and system components,

including an external drive. The case comes with a lock and riveted steel rings for the optional shoulder strap. List price: \$99.50.

Mac-System

A 19-inch by 15-inch by 21-inch polyethylene case, designed for airline travel, that holds the Macintosh and system components. The body of the case holds the Mac, keyboard, and external drive; the lid has separate compartments for a modem, numeric keypad, mouse, and disks. The case has locks and a steel tongue-and-groove frame. List price: \$225.



Macintosh/Imagewriter Bag, Kiwi

■ **Kiwi**

**6721 N.W. 36th Ave.
Miami, FL 33147
305/835-8228**

Macintosh Bag

A padded carrying bag for the Macintosh with an optional zip-on compartment for the Imagewriter printer. Each compartment provides a padded divider with Velcro closures to separate the bag's contents and prevent them from shifting. The computer and printer compartments can be carried separately or as a single unit. The bag includes an adjustable

nylon webbing shoulder strap. Together, the bags weigh 7 pounds and measure 23 inches in width, 18 inches in height, and 16 inches in depth. They are available in gray. List price: Macintosh bag \$129.95, with printer compartment \$199.95.

■ **Murphy Engineering Co., Inc.**

**809 E. Chestnut St.
Boonville, IN 47601
812/897-0490**

The Printer Stand

A stand that holds the Imagewriter at a 45-degree angle for improved printout readability. The paper feeds from underneath, allowing the sheets to fanfold behind the stand. The Printer Stand is available in walnut or in light or dark poplar. It measures 14 inches in width, 10 inches in height, and 8 inches in depth and weighs 3½ pounds. List price: \$44.95.

Epson Dot Matrix Printer Interfaces

The following companies have announced printer interfaces that enable you to use the Epson FX-80, RX-80, FX-100, and RX-100 dot matrix printers with the Macintosh. The products vary from printer driver programs to serial interface cards, so contact the manufacturers for further information.

■ **Assimilation Process**

**20833 Stevens Creek Blvd.
Cupertino, CA 95014
408/446-0797**

Mac Epson Connection

(FX-80, RX-80, FX-100, RX-100), \$89

■ **Dresselhaus Computer Products**

**837 E. Alostia Ave.
Glendora, CA 91740
818/914-5831**

All You Need

(FX-80), \$99.95

■ **Hanzon Data, Inc.**

**18732 142nd Ave. NE
Woodinville, WA 98072
206/487-1717**

Hanzon Universal Card

(FX-80, RX-80, FX-100), \$129.50

■ **SoftStyle, Inc.**

**7192 Kalaniana'ole Hwy. #205
Honolulu, HI 96825
800/367-5600**

EPSTART

(FX-80, FX-100), \$39.95

Macware News *uses information provided by manufacturers; it does not evaluate products or corroborate manufacturers' claims. Send a description and a photograph or demo disk of your new product to Macware News, Macworld, 555 De Haro St., San Francisco, CA 94107, 415/861-3861. □*

If we told you this **HANDY DISK** could plan a budget, play a game, make a list, write a tune, amortize a loan, make a design, balance a checkbook, calendar events, plan a diet, study math, create bargraphs, do your taxes, sort data, copy a disk, average test scores, hit the jackpot, create a quiz, play music, write a poem, sound a siren, make a sprite, process words and teach you to program in **BASIC**, for under **\$25.00** would you shake your head in **DISK** belief?

It's all true!

HANDY DISKS... Ready-to-Run book/disk packages from Alfred

The Book: contains program documentation, instructions on uses and modifications, lots of illustrations, and machine operating instructions.

The Disk: over 30 ready to run programs

To order: send \$25.95 (\$23.95 + \$2 postage & handling) to:



Alfred Publishing Co.

P.O. Box 5964

Sherman Oaks, CA. 91413

Circle 80 on reader service card



WHY YOUR MOUSE WILL WANT TO RUN TO 1st BASE.

Because the 1stBASE™ Database System is RELATIONAL and uses Mac's features to the max!

Yes! 1stBASE is just as friendly as your Macintosh®. Not only does it use your Mac's mouse, windows and wealth of features to their fullest, but it's relational as well. Meet your data management needs with unprecedented ease and speed. Design and create files.

Enter and edit data. Sort on multiple fields and produce reports from single or joined files—just by pointing and clicking your mouse. Make the most of every byte of your Macintosh with 1stBASE, The Relational Database System. It's a piece of cheesecake!

DeskTop Software™ Corporation

228 Alexander St. (CN-5287) Princeton, New Jersey 08540. 609-924-7111

File Handling And Report Writing

1st BASE™

Relational Database System

for the Apple® Macintosh®

DeskTop Software Corporation



Don't go fishing for software that won't solve your problems.



TimeBase™ is the world's first "software centralizer". It allows you to manage your software instead of letting your software manage you. This versatile time manager organizes your day-to-day business activities by enabling you to integrate information from your database, word processor, spreadsheet, or any other Macintosh™ software, to your busy schedule. Now there is a reason to leave your Macintosh™ on all day.

TimeBase™ keeps track of your daily, weekly and monthly schedules several years in advance, and it can track up to four independent schedules. Each appointment can be quickly marked with a priority level to avoid conflicting appointments. Special occasions, reminders and recurring appointments are entered into your schedule as quickly as you can click your mouse. You can locate an available time slot in your schedule with a single click ... and schedule an appointment with a second click.

TimeBase™ will even locate an appointment you have scheduled up to one year in advance, in seconds. Just because you forget ... **TimeBase™** doesn't!

At the same time it allows you to access and link data from other application software to these appointments. It's as easy as "cut and paste."

TimeBase™ special "T.M.P." feature provides you with Tracking, Maintaining and Planning capabilities. You can track callbacks, accounts payable/receivable and time cards. Maintain expense records, phone numbers and addresses, cash flow, billing cycles, service contracts and timely mailings. Even short and long term planning are made simple by **TimeBase™**.

A variety of standard business forms and letters are also provided. These link quickly and easily to your database, can be customized, and allow for personalized mailing.



A Time Whose Idea Has Come

Circle 94 on reader service card

ORDER FORM

- ☐ Please rush me more information
- ☐ Please rush: _____ **TimeBase** program(s) at \$149.95 ea.
- ☐ Check/Money Order enclosed \$ _____ (Add \$3.50 per program for delivery & handling)
- ☐ Visa ☐ MasterCard

Acct. No. _____

Expires _____ Signature _____

Name _____

Address _____

City _____ State _____ Zip _____

SoftDesign, 14145 S.W. 142 Ave.
Miami, Florida 33186
(305) 253-5521



Introducing a pocketful of miracles.

It's the new BASF Qualimetric™ 3.5" Micro FlexyDisk®. Its name is a lot bigger than its size, and a lot smaller than its capacity – one astounding megabyte. Our new Micro fits into more than shirt pockets. It fits into several of the hottest new small portable personal computers – like Apple™ Computer's new Macintosh™ and Lisa™ 2 and Hewlett-Packard's HP-150 Touchscreen PC.

The Qualimetric part is what makes our Micro FlexyDisk different from the others that will inevitably follow. It indicates a new standard in design, production, inspection, and testing. This standard enables us to warranty the Micro for a lifetime.* No more, no less. In addition, we certify that each bit of every byte on or between every track on each Micro FlexyDisk is 100% error-free. That's

*Contact BASF for a copy of our warranty.

because we know, while each Micro FlexyDisk may only cost a couple of bucks, the hours and brain cells you put into it are priceless.

For those occasions when you need more than a pocketful of miracles, we provide a handy and virtually earthquake-proof 5-pack. It's sized to slip easily into your briefcase, handbag, or backpack.

For a plethora of technical details about our new Micro FlexyDisk and even more important information on where to buy it, call toll-free. 1-800-343-4600.

Celebrating 50 years of magnetic recording



The Voyage of Sonar Sub



Rob Dickerson

You are the commander of a submarine on a perilous journey deep in enemy territory. The waters are planted with an endless supply of deadly “smart mines,” which use sophisticated sensors to stalk your sub. The on-board computer status window shows that your air supply is getting low and battery power is quickly declining. You need to surface for a few moments to replenish the air supply and recharge your batteries.

Sonar detects a mine approaching the hull of the ship. You quickly take evasive action: engines half forward, ballast full down, diving plane half down, fire torpedo, ballast half up, diving plane full up, a near miss. You immediately shift engines into full reverse. The mine is only an inch away from destroying or damaging your sub, and your battery power is almost at zero. . . .

Sonar Sub is an arcade-style game, written in Microsoft BASIC (MBASIC) version 2.0, that gives you command of a submarine and pits you against deadly "smart mines." The game not only entertains, it demonstrates how you can use menus, windows, control buttons, sound, graphic animation, and the mouse to create an exciting game. (See "Microsoft BASIC Comes of Age" in this issue for an in-depth look at the language.) The object of *Sonar Sub* is to destroy as many enemy mines as possible. Mines stalk the sub and try to make contact with it. As sub commander, you must use the menu controls to elude the mines and lure them into the line of torpedo fire. The mines are smart enough to avoid your line of fire, but they can be fooled and blunder into one of your torpedoes.

The program's pull-down menu titles include Ballast, Engines, Diving Planes, Torpedo, Repairs, and SOS (see Figure 1). You control the fate of the sub by using the mouse to choose from the options listed in the

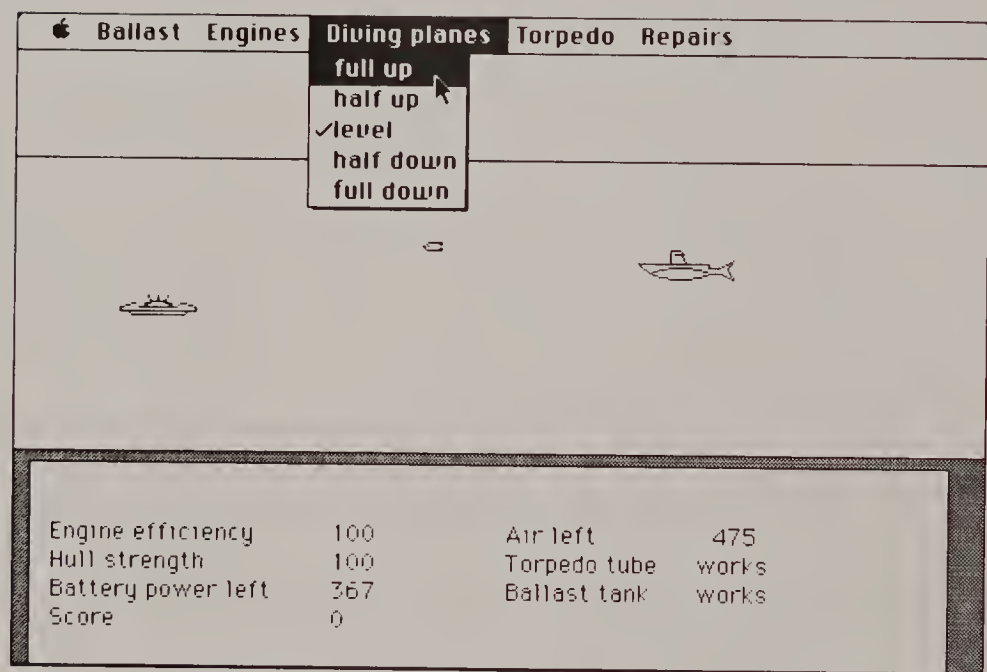


Figure 1

The mines avoid the torpedo unless you lure them into the line of fire with the Ballast, Engines, and Diving Planes controls. In the situation presented here, setting the diving plane at "full up," the engines at "half forward," and the ballast control at "half up" causes the mine to follow the sub's upward path until the mine is intercepted and destroyed by the torpedo.

menus. The Ballast menu controls the level of the sub, and the Engines menu determines the sub's speed and direction. With the Diving Planes menu, you increase or decrease the angle at which the sub dives underwater or rises to the surface. You maneuver the sub by controlling the ballast tanks, diving planes, and engines. Only one option is given in the Torpedo menu: Fire. The Repairs menu lets your sub recover quickly from damage caused by the mines. And the SOS menu's lone option—STOP: Reset Menu—immediately stops the game and restores the standard MBASIC menus and windows.

The status window at the bottom of the game's screen provides information about the sub's engine efficiency, hull strength, battery power, air supply, and the number of mines it has destroyed. The window also reports on the working conditions of the torpedo tube and ballast tank. You repair the sub by clicking on the options in the Repairs menu. Be sure to make the repairs needed to keep your sub in battle-ready condition.

When the sub is on the surface, the batteries automatically recharge and the air supply is replenished. When the sub dives underwater, the air supply is depleted and the engines drain battery power. The game finishes when the sub's hull collapses or you run out of air.

Like most arcade games, *Sonar Sub* has beeps and other sound effects to make the game seem realistic. You regulate the sound volume with the Control Panel. To switch the sound off, you set the volume control at zero. Normally you adjust the sound level before you start up the program.

The prerelease version of MBASIC 2.0 that was used to create *Sonar Sub* had a bug that caused desk accessory windows and the *Sonar Sub* playing window to overwrite each other. If you open a desk accessory such as the Control Panel during the game and notice the sub and mines wandering through the accessory's window, close the desk accessory window and start the game over. Hopefully, the problem will be eradicated by the time you read this warning.

Taking Command

Start up the Engineering version of MBASIC, and type in the *Sonar Sub* program (see the listing "Sonar Sub Code") in the empty List window. (You can also download the program from CompuServe, where it is listed in the Reference Library (section XA4) of the Micronet Apple user group.) If you have used *MacWrite* to edit text, you already know how to use the BASIC editor because both programs require similar editing techniques. Be sure to save your work periodically.

(continues on page 134)


```

-----
'                               Sonar Sub
-----

' This program is designed to demonstrate
' the menu and graphic functions provided
' by Microsoft BASIC 2.0.

-----

' Main control loop
-----

main:
  GOSUB initsys      'initialize the system
  ON MENU GOSUB udatm
mloop0:
  GOSUB initgam      'initialize the game
  WHILE alive
    FOR loopm=0 TO 5
      MENU ON
      MENU STOP
      GOSUB udatsub   'update sub position
      GOSUB udatemy   'update enemy position
      IF torp THEN GOSUB udatorp 'update torpedo position
    NEXT loopm
    GOSUB udatcond    'update sub conditions
    GOSUB makesound   'make a sound
  WEND
  WINDOW 2
  CLS
  MOVETO 20,20:PRINT "You destroyed ";score;" enemy mines."
  MOVETO 20,40:PRINT "Do you want to try again, Captain?"
  FOR i=1 TO 10:SOUND 800,1:SOUND 600,1:NEXT i
  BUTTON 1,1,"OK",(250,50)-(300,74)
  BUTTON 2,1,"QUIT",(310,50)-(360,74)
  WHILE DIALOG(0)<>1:WEND
  BUTTON CLOSE 1:BUTTON CLOSE 2
  CLS
  GOSUB statusinit
  WINDOW 1
  IF DIALOG(1)=1 THEN mloop0
  MENU RESET
  STOP

```

```

-----
'                               Make sonar sound
-----

makesound:
  SOUND 1000-(2*sypos),3
  RETURN

-----

' Update enemy position
-----

udatemy:
  delx=sxpos-expos:dely=sypos-eypos
  vye=vye+SGN(dely-30*(ABS(delx)>50))
  IF vye<-4 THEN vye=-4! ELSE IF vye>4 THEN vye=4
  ex=expos+SGN(delx)*(score+1)
  ey=eypos+vye
  IF ey<50 THEN ey=50:vye=0! ELSE IF ey>190 THEN ey=190:vye=-40
  PUT(expos,eypos),e:PUT(ex,ey),e
  eypos=ey:expos=ex
  IF ABS(delx)>30 OR ABS(dely)>10 THEN RETURN

' Enemy touched the user submarine

  GOSUB kilenmy
  ON 2*RND GOTO udate0,update1
  balwrk=false:GOTO udate1
update0:
  torwrk=false
update1:
  hulst=hulst+10*(hulst>9)
  engeff=engeff+10*(engeff>9)
  GOSUB distat
RETURN

-----

' Update the submarine position
-----

udatsub:
  xvel=xvel+engn-SGN(xvel)
  IF xvel>20 THEN xvel=20
  IF xvel<-20 THEN xvel=-20
  sx=sxpos+xvel/5
  sy=sypos+balst+dive*xvel/15
  IF sx<-46 THEN sx=505! ELSE IF sx>505 THEN sx=-46
  IF sy>190 THEN sy=sypos

```

(continues on page 130)

Sonar Sub Code

If you make a mistake typing in this listing, MBASIC lets you know. When you run the program and it encounters an error, an error message is displayed in a dialog box and the line containing the error is indicated in the List window:



Sonar Sub Code

(continued from page 129)

```

IF sy>50 THEN udatsub1
  sy=50
  air=air-(air<1000)
  battery=battery-(battery<1000)
  GOSUB shortstat
  GOTO udatsub2
udatsub1:
  battery= battery-ABS(engn)*100/engeff
  IF battery>=0 THEN udatsub2
    engn=0:battery=0
    msg$="Dur batteries need recharging, Captain! "
    MENU 2,menustate(2),1
    menustate(2)=3
    MENU 2,menustate(2),2
    GOSUB message
udatsub2:
  IF (sxpos=sx) AND (sypos=sy) THEN RETURN
  PUT (sxpos,sypos),s
  PUT (sx,sy),s
  sxpos=sx: sypos=sy
RETURN
'-----
' Update torpedo position
'-----
udatorp:
  tindx=1-tindx*(tindx<16)
  IF tsavx(tindx)<0 THEN torp=0:RETURN
  i=33+(POINT(tsavx(tindx),ty)=33)*3
  PSET (tsavx(tindx),ty),i
  tx=tx-7
  tsavx(tindx)=tx
  i=33+(POINT(tx,ty)=33)*3
  PSET (tx,ty),i
  PUT (tx-3,ty-2),t:PUT (tx-10,ty-2),t

' Check for coincidence with enemy

  IF ABS(tx-expos-15)>20 OR ABS(ty-eypos-3)>10 THEN RETURN

' Erase the torpedo

  PUT (tx-10,ty-2),t
  FOR i=1 TO 16
    j=33+(POINT(tsavx(i),ty)=33)*3
    PSET (tsavx(i),ty),j
  NEXT i
  torp=false
  GOSUB kilenmy ' destroy the enemy
  score=score+1
  GOSUB distat
RETURN
'-----
' Destroy the enemy
'-----
kilenmy:
  PUT (expos,eypos),e
  FOR i=1 TO 2:FOR j=0 TO 80 STEP 4
    PUT (expos-j,eypos-j)-(expos+40+j,eypos+10+j),e
    SOUND 30*i+j MOD 20,1,255
    NEXT j:NEXT i
  expos=555+605*(RND<.5)
  msg$="Sonar indicates enemy to our right."
  IF expos<250 THEN msg$="Sonar indicates enemy to our left."
  GOSUB message
RETURN
'-----
' Update submarine conditions
'-----
udatcond:
  IF air<=0 OR hult*4<sypos THEN alive=0
  IF sypos<=50 THEN RETURN
  air=air+10*(air>0)
  GOSUB shortstat
RETURN
'*****
' Service user interaction with menu
'*****
udatm:
  menuid=MENU(0)
  itemid=MENU(1)
  MENU menuid,0,1
  IF menuid>3 THEN udatm0
  MENU menuid,menustate(menuid),1
  MENU menuid,itemid,2
  menustate(menuid)=itemid
udatm0:
  ON menuid GOTO ballast,engine,diving,fire,repair,sos
RETURN

```

' Set new ballast tank level

ballast:

```
IF balwrk THEN balst=itemid-3:RETURN
MENU menuid,itemid,1
menustate(menuid)=balst+3
MENU menuid,menustate(menuid),2
msg$="The ballast tank is broken Captain!"
GOSUB message
RETURN
```

' Set new engine speed

engine:

```
engn=2*itemid-6
RETURN
```

' Set new diving plane level

diving:

```
dive=3-itemid
RETURN
```

' Fire a torpedo

fire:

```
IF torwrk THEN fire0
msg$="The torpedo tube is broken, Captain!"
GOSUB message
RETURN
```

fire0:

```
IF torp THEN RETURN 'exit if torpedo already exists
ty=sypos+9
tx=sxpos
FOR i=1 TO 16:tsavx(i)=tx:NEXT i
torp=true
PUT(tx-10,ty-2),t
FOR i=2000 TO 1000 STEP -100:SOUND i,1:NEXT i
RETURN
```

' Conduct repairs of the sub

repair:

```
ON itemid GOTO rephul,repeng,reptor,repbal
```

' Repair the hull

rephul:

```
hulst=100:GOSUB distat:RETURN
```

' Repair the engine

repeng:

```
engeff=100:GOSUB distat:RETURN
```

' Repair the torpedo tube

reptor:

```
torwrk=true:GOSUB distat:RETURN
```

' Repair the ballast tank

repbal:

```
balwrk=true:GOSUB distat:RETURN
```

' SOS - stop and reset

sos:

```
IF itemid=1 THEN MENU RESET:STOP
RETURN
```

' Display the game status

statusinit:

```
WINDOW OUTPUT 2
```

```
MOVETO 10,40:PRINT"Engine efficiency:"
```

```
MOVETO 10,55:PRINT"Hull strength:"
```

```
MOVETO 10,70:PRINT"Battery power left:"
```

```
MOVETO 10,85:PRINT"Score:"
```

```
MOVETO 250,40:PRINT"Air left:"
```

```
MOVETO 250,55:PRINT"Torpedo tube works"
```

```
MOVETO 250,70:PRINT"Ballast tank works";
```

```
GOSUB distat
```

```
WINDOW OUTPUT 1
```

```
RETURN
```

(continues on page 132)

Sonar Sub Code
(continued from page 131)

```
dostat:
  WINDOW OUTPUT 2
  MOVETO 150,40:PRINT engeff
  MOVETO 150,55:PRINT hulst
  MOVETO 150,70:PRINT battery
  MOVETO 350,40:PRINT air
  MOVETO 350,55
  IF torwrk THEN PRINT "works"    " ELSE PRINT "broken"
  MOVETO 350,70
  IF balwrk THEN PRINT "works"    " ELSE PRINT "broken"
  MOVETO 150,85:PRINT score;
  WINDOW OUTPUT 1
  RETURN
```

```
shortstat:
  WINDOW OUTPUT 2
  MOVETO 350,40:PRINT air
  MOVETO 150,70:PRINT battery
  WINDOW OUTPUT 1
  RETURN
```

' Print a message to the screen

```
message:
  WINDOW OUTPUT 2
  CALL MOVETO (10,15):PRINT msg$;
  SOUND 400,3:SOUND 600,5
  GOSUB distat
  WINDOW OUTPUT 1
  RETURN
```

' Initialize the system to start another game

```
initgam:
  FOR i=1 TO 3
    MENU i,menustate(i),1
    menustate(i)=3
    MENU i,menustate(i),2
  NEXT i
  true=-1:false=0
  alive=true:twobtn=false
  sxpos=50:sypos=50
  score=0:engn=0
  vye=0:expos=-50:eypos=200
  hulst=100:engeff=100:battery=500
  air=500:torwrk=true:balwrk=true
  torp=false:mnuflg=false
  CLS
  LINE(0,55)-(520,55)
  PUT(sxpos,sypos),s
  GOSUB distat
  RETURN
```

' Initialize the system to begin game

```
initsys:
  DEFINT a-z
  DIM s(90),t(16),e(40),tsavx(16)
  DIM winsav(1740),menustate(3)
  MENU 1,0,1,"Ballast"
  MENU 1,1,1,"full up"
  MENU 1,2,1,"half up"
  MENU 1,3,2,"level"
  MENU 1,4,1,"half down"
  MENU 1,5,1,"full down"
  MENU 2,0,1,"Engines"
  MENU 2,1,1,"full forward"
  MENU 2,2,1,"half forward"
  MENU 2,3,2,"all stop"
  MENU 2,4,1,"half reverse"
  MENU 2,5,1,"full reverse"
  MENU 3,0,1,"Diving Planes"
```



```

MENU 3,1,1,"full up"
MENU 3,2,1,"half up"
MENU 3,3,2,"level"
MENU 3,4,1,"half down"
MENU 3,5,1,"full down"
MENU 4,0,1,"Torpedo"
MENU 4,1,1,"fire"
MENU 5,0,1,"Repairs"
MENU 5,1,1,"fix hull"
MENU 5,2,1,"fix engines"
MENU 5,3,1,"fix torpedo tube"
MENU 5,4,1,"fix ballast tank"
MENU 6,0,1,"SOS"
MENU 6,1,1,"STOP:Reset Menu"

```

```

WINDOW 2, (10,235)-(492,340),3
WINDOW 1, (0,20)-(520,228),3
GOSUB statusinit

```

' Draw sub image & put the bit map in s array

```

CLS
CIRCLE(25,0),43,,1.21,1.93
CIRCLE(25,80),43,,4.35,5.1
LINE(10,40)-(3,35)
LINE(3,35)-(40,35)
LINE(40,35)-(40,37)
LINE(40,37)-(45,37)
LINE(45,37)-(53,33)
LINE(53,33)-(50,38)
LINE(50,38)-(53,43)
LINE(53,43)-(47,40)
LINE(47,40)-(40,40)
LINE(20,35)-(20,28)
LINE(20,28)-(25,28)
LINE(25,28)-(28,35)
LINE(22,30)-(27,30)
GET(3,28)-(53,45),s
PUT(3,28),s

```

' Draw torpedo & put the bit map in t array

```

CLS
LINE(0,2)-(3,0)
LINE(3,0)-(10,0)
LINE(10,0)-(10,4)
LINE(10,4)-(3,4)
LINE(3,4)-(0,2)
LINE(8,0)-(10,2)
LINE(10,2)-(8,4)
GET(0,0)-(10,4),t

```

' Draw enemy & save bit map in e array

```

CLS
CIRCLE(20,16),13,,4.03,5.4
LINE(0,6)-(6,4)
LINE(6,4)-(8,4)
LINE(8,4)-(10,6)
LINE(10,6)-(30,6)
LINE(30,6)-(32,4)
LINE(32,4)-(34,4)
LINE(34,4)-(40,6)
LINE(40,6)-(40,8)
LINE(40,8)-(0,8)
LINE(0,8)-(0,6)
LINE(4,8)-(6,10)
LINE(6,10)-(34,10)
LINE(34,10)-(36,8)
LINE(11,2)-(13,5)
LINE(15,0)-(16,4)
LINE(20,0)-(20,3)
LINE(25,0)-(24,4)
LINE(29,2)-(27,5)
GET(0,0)-(40,10),e
RETURN

```


(continued from page 128)

When you finish entering and saving the program, run and debug it. Choose the Start option from the Run menu to test out the game. If MBASIC finds an error, a window opens containing an English-language explanation of the bug. And a List window opens with a rectangle drawn around the statement that MBASIC considers erroneous. You can correct the erroneous statement in the rectangle.

Continue debugging until the game runs properly, and then save the final version to disk. When you begin developing your own software, you may want to explore some of the more advanced MBASIC debugging features. To use the tracing feature, for example, choose Trace from the Run menu. The List window displays a rectangle around each statement as it is executed. In this way, you can simultaneously view the output and the execution of the program. You can also stop or resume program execution with the Run menu options.

Super Sonar Sub

Besides being fun to play, *Sonar Sub* offers insight into the programming capabilities of the Mac and MBASIC 2.0. The fast animation in *Sonar Sub*, for example, results from the GET and PUT statements. These statements allow you to manipulate the image made up of bits on the Mac screen. The statements have the following form: GET rectangle, *array-name* PUT rectangle, *array-name*, *action-verb*.

The PUT *action-verb* allows you to use commands such as OR, XOR, AND, PSET, and PRESET to manipulate the bit map on the screen. You can also use the rectangle declaration to scale the image to the screen for creating the mine explosions and other graphics. If you want to figure out how the game works in detail, a description of each variable is provided in the table "Sonar Sub Variables."

One useful MBASIC feature not applied in the *Sonar Sub* program is the ability to display graphics created with *MacPaint*. The images for the *Sonar Sub* submarine, mine, and torpedo, for example, could

Sonar Sub Variables

	Variable	Function
Submarine	<i>alive</i>	Set to true if the player is still "alive."
	<i>sxpos, sypos</i>	Represents the submarine's position.
	<i>xvel</i>	Represents the submarine's horizontal velocity.
	<i>sx, sy</i>	Temporary variables that represent the submarine's next position.
	<i>balwrk</i>	Set to true if the ballast tank works.
	<i>balst</i>	Represents the water level in the ballast tank.
	<i>dive</i>	Represents the position of the submarine's engine.
	<i>air</i>	Represents the amount of air left for the submarine's crew.
	<i>battery</i>	Represents the amount of battery power remaining for the submarine's engine.
	<i>bulst</i>	Represents the strength of the submarine's hull.
Enemy Mine	<i>engeff</i>	Represents the efficiency of the submarine's engine.
	<i>s</i>	Represents the submarine's image.
	<i>delx, dely</i>	Represents the difference between the submarine's position and the enemy mine's position.
	<i>expos, eypos</i>	Represents the enemy mine's position.
	<i>ex, ey</i>	Temporary variables that represent the next enemy mine's position.
	<i>vye</i>	Represents the enemy mine's horizontal velocity.
	<i>e</i>	Represents the enemy mine's image.

Sonar Sub Variables

This table describes variables associated with the control of the program. You can assign values to variables, or they can be defined as a result of calculations.

	Variable	Function
Torpedo	<i>torwrk</i>	Set to true if the torpedo tube works.
	<i>torp</i>	Set to true if a torpedo currently exists.
	<i>tx, ty</i>	Represents the torpedo's current position.
	<i>tsavx</i>	Represents the horizontal position of the trail of bubbles left by the torpedo.
	<i>tindx</i>	Points to the next bubble to be erased.
	<i>t</i>	Represents the torpedo's image.
Custom Menu	<i>menuid</i>	Represents the number of the last menu category selected by the player.
	<i>itemid</i>	Represents the number of the last menu item selected by the player.
	<i>menustate</i>	Represents the positions of the menu's check marks.
	<i>mnuflag</i>	Set to true if the menu has been disabled; otherwise, set to false.
Message Windows	<i>winsav</i>	Saves the image that is behind any window opened during the game.
	<i>tuobtn</i>	Set to true if the message subroutine is to create two buttons; otherwise, the message subroutine creates only one button.
	<i>msg\$</i>	Represents the text displayed by the message subroutine.

have been drawn with *MacPaint* instead of the MBASIC LINE and CIRCLE statements. To put a *MacPaint* image into an MBASIC program, cut the *MacPaint* drawing to the Clipboard. Then quit *MacPaint*, start up MBASIC, and type in and run the following short program:

```
OPEN "CLIP:picture" FOR INPUT AS 1
pic$=EQINPUT$(LOF(1),1)
CLOSE 1
PICTURE pic$
```

Once you are familiar with MBASIC, you'll probably want to study the *Sonar Sub* listing and discover ways to enhance the game. Why not add sound effects, different play levels, another torpedo tube, and extra menu controls while you learn more about programming with the Mac and MBASIC? Good luck, commanders. □

Rob Dickerson is a veteran programmer and product marketing manager for languages at Microsoft.

*Microsoft BASIC 2.0
Microsoft Corporation
10700 Northup Way
Bellevue, WA 98004
206/828-8080
List price: under \$150*

The fastest selling, highest quality case made for the Macintosh Computer.

MacTote.™

*PrintTote for
Imagewriter
coming soon!*



Now your Macintosh Computer can leave your home or office fully protected and in style.

The **MacTote** computer case is clearly the finest carrying case manufactured especially for your Macintosh Computer, and for a number of easy-to-see reasons:

1. Padded pouch for mouse; 2. Open pouch for manuals or notes; 3. Open, padded pouch for keyboard; 4. Side handle for easy carrying and stability; 5. Padded, Velcro handle (no snaps); 6. Padded, non-slip shoulder strap; 7. Velcro pouch for disks or accessories on side of case; 8. Zippered padded pouch for disk drive; 9. Padded pouch for accessories, modem, cords, etc., and extra padding to protect Macintosh's screen; 10. Reinforced bottom fully supports and distributes weight of Macintosh; 11. Heavy-duty nylon zippers.

Optimum Computer Luggage has extensive experience in making top-of-the-line totes and accessories and

MacTote is the latest in a long line of beautiful and functional luggage. Made



of long-wearing and completely water-resistant Cordura, **MacTote** gives you every feature you'll ever need for carrying your Macintosh and peripherals.

Another attractive feature is **MacTote's** low price, which makes it even easier to pick up and carry away.

Call our 800 number today for the dealer nearest you so you can get a **MacTote** for your Macintosh.

Who says you can't take it with you?

Call (800)447-0300
Or in CA TOLL FREE (800)632-4200.

OPTIMUM
COMPUTER LUGGAGE

*The Finest Quality
Doesn't Have To Cost More.*

9005 Complex Drive
San Diego, CA 92123

Macintosh is a trademark licensed to Apple Computer, Inc.
MacTote is a trademark of Optimum Computer Luggage.

Reveal The Power Inside Your Macintosh™ . . .



Brock Keystroke* Data Base And Report Generator

Advanced information management becomes crystal clear with the only software that mirrors the productivity potential of your Macintosh...Brock Keystroke Data Base and Report Generator.

The Keystroke electronic file cabinet enables you to STORE, FIND, UPDATE, or PRINT information with startling clarity. And only Keystroke has enlightened features such as field formatting, automatic repeat fields, default responses, rapid search/sorts, computed fields and cross-referencing. Plus, Keystroke's Report Generator directs the full power of the Data Base into printouts that conform to your exact needs, including flexible formatting, statistics, highlighting, computed columns, and more.

To reveal the full power inside your Macintosh, you don't need a crystal ball. Simply visit your Apple® dealer and ask for a Brock Keystroke demonstration. Or contact us directly for all the illuminating details.



Brock Software Products, Inc.
8603 Pyott Rd., Box 799
Crystal Lake, Illinois 60014
815/459-4210
Telex: 722-469 BROCK CRY

*A Symbol of Excellence By
Brock Software Products, Inc.

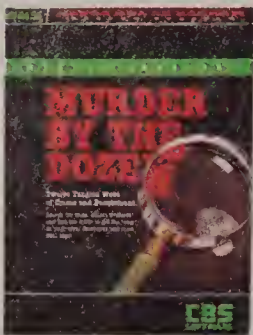


BROCK SOFTWARE
PRODUCTS, INC.

®Apple is a registered trademark of Apple Computer, Inc. ™Macintosh is a trademark of Apple Computer, Inc.

Circle 46 on reader service card

Who killed Wally Snark?



Available for Apple® II+/IIe/IIc,
Macintosh®, Commodore 64™,
IBM® PC and PCjr.

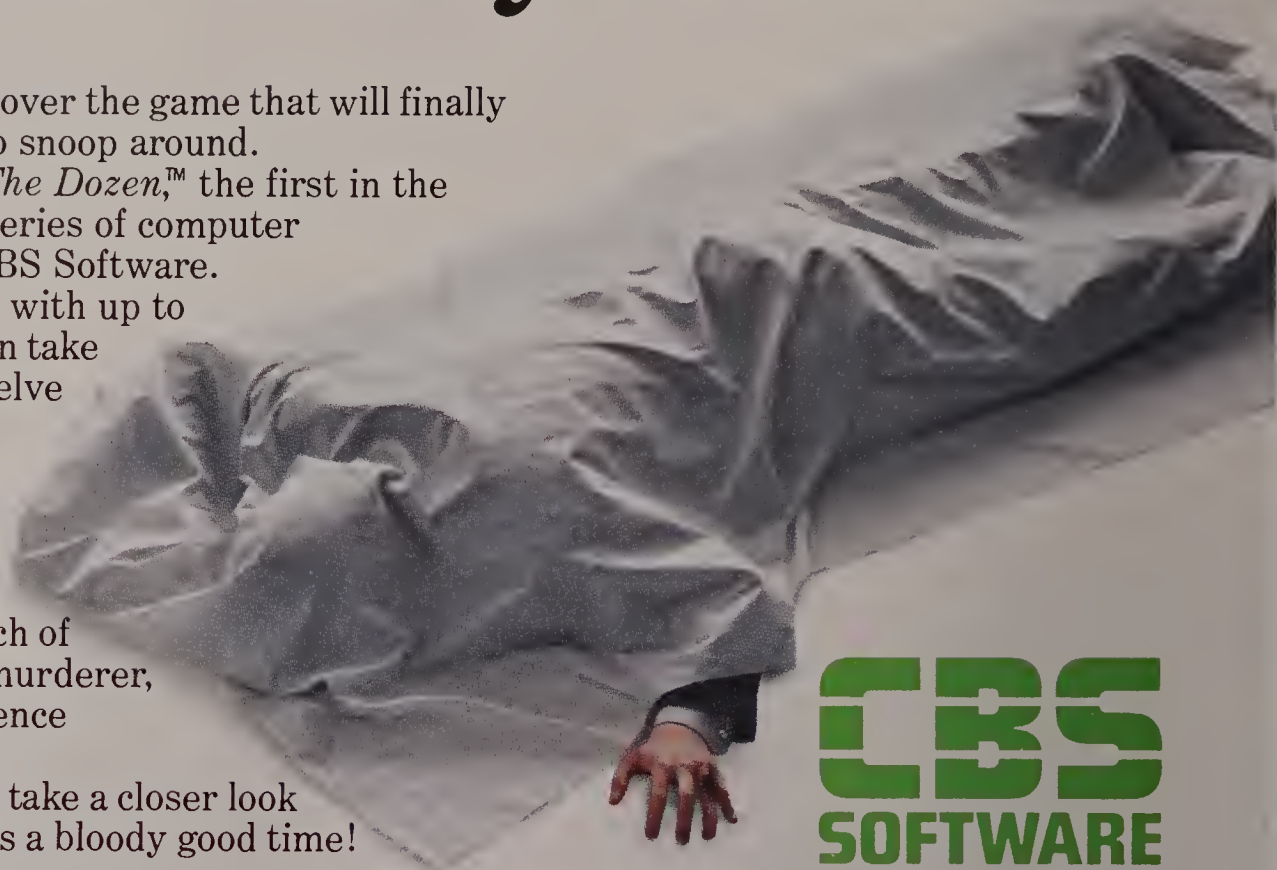
You're about to uncover the game that will finally satisfy your need to snoop around.

It's *Murder By The Dozen*™, the first in the *Mystery Master*™ series of computer crime cases from CBS Software.

Playing alone, or with up to four players, you can take a stab at solving twelve different crimes, racing to unmask the perpetrator.

Your Crime Computer takes you through a twisted trail of shady characters, false leads, clever deceptions and red herrings in search of clues. But even if you find the true murderer, will you have gathered enough evidence to convict him (or her)?

Get your magnifying glass and go take a closer look at *Murder By The Dozen*™ today. It's a bloody good time!

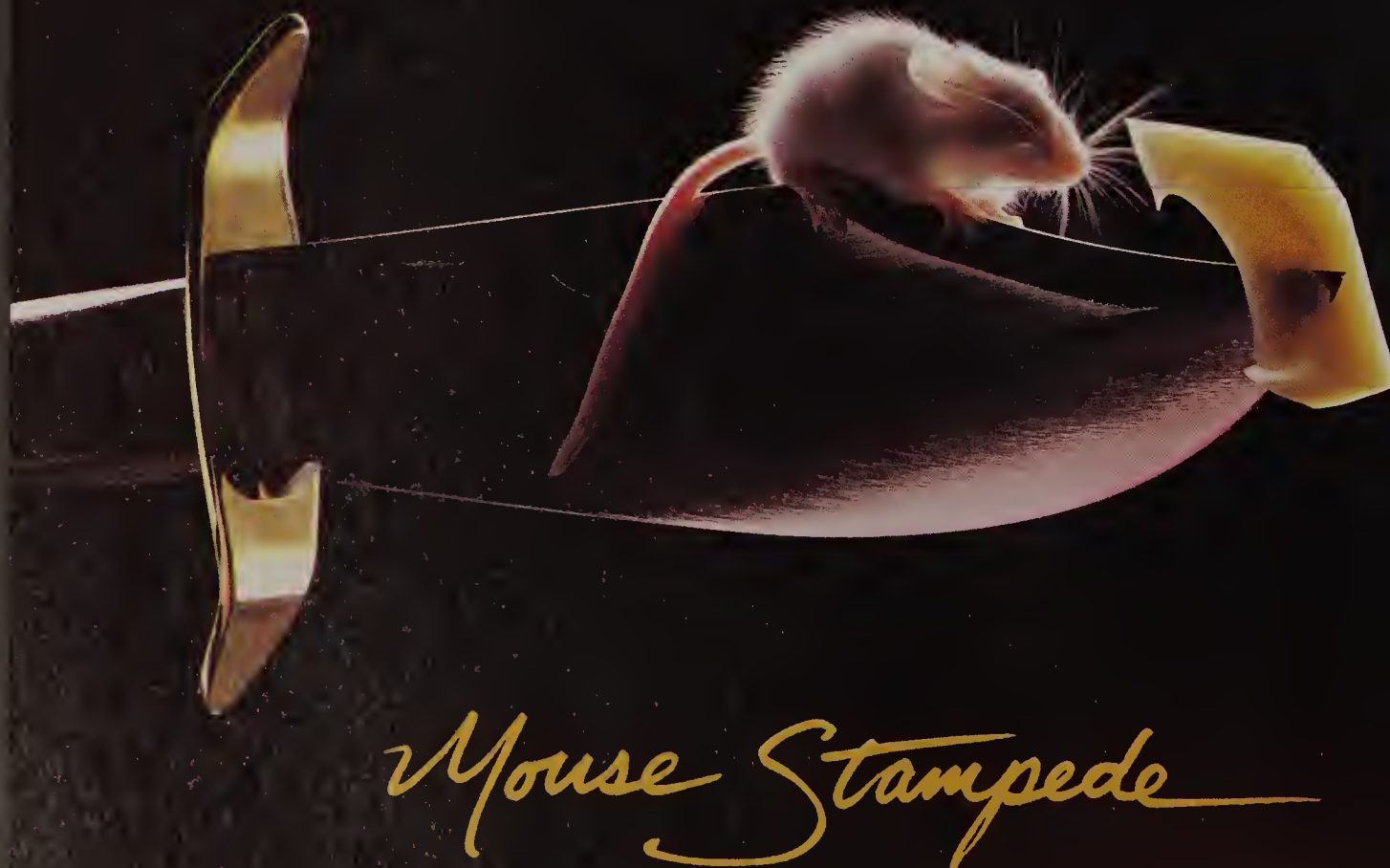


CBS
SOFTWARE

Making you the best.

© 1984 CBS Inc. CBS Software, a Unit of CBS, Inc., One Fawcett Place, Greenwich, CT 06836. (203) 622-2525.
Program © 1984 BrainCank, Inc. "Apple" and "IBM" are registered trademarks of Apple Computer, Inc. and
International Business Machines Corp., respectively. "Commodore 64" is a trademark of Commodore Electronics Ltd.

Circle 151 on reader service card



Video madness for the Apple Macintosh.

Call (617) UNI-CORN

Circle 31 on reader service card

Copyright © 1984 Mark of the Unicorn, Inc., 222 Third Street, Cambridge, MA 02142

How smart are you?

*Take this 15 second
trivia quiz and see how
smart you really are.*

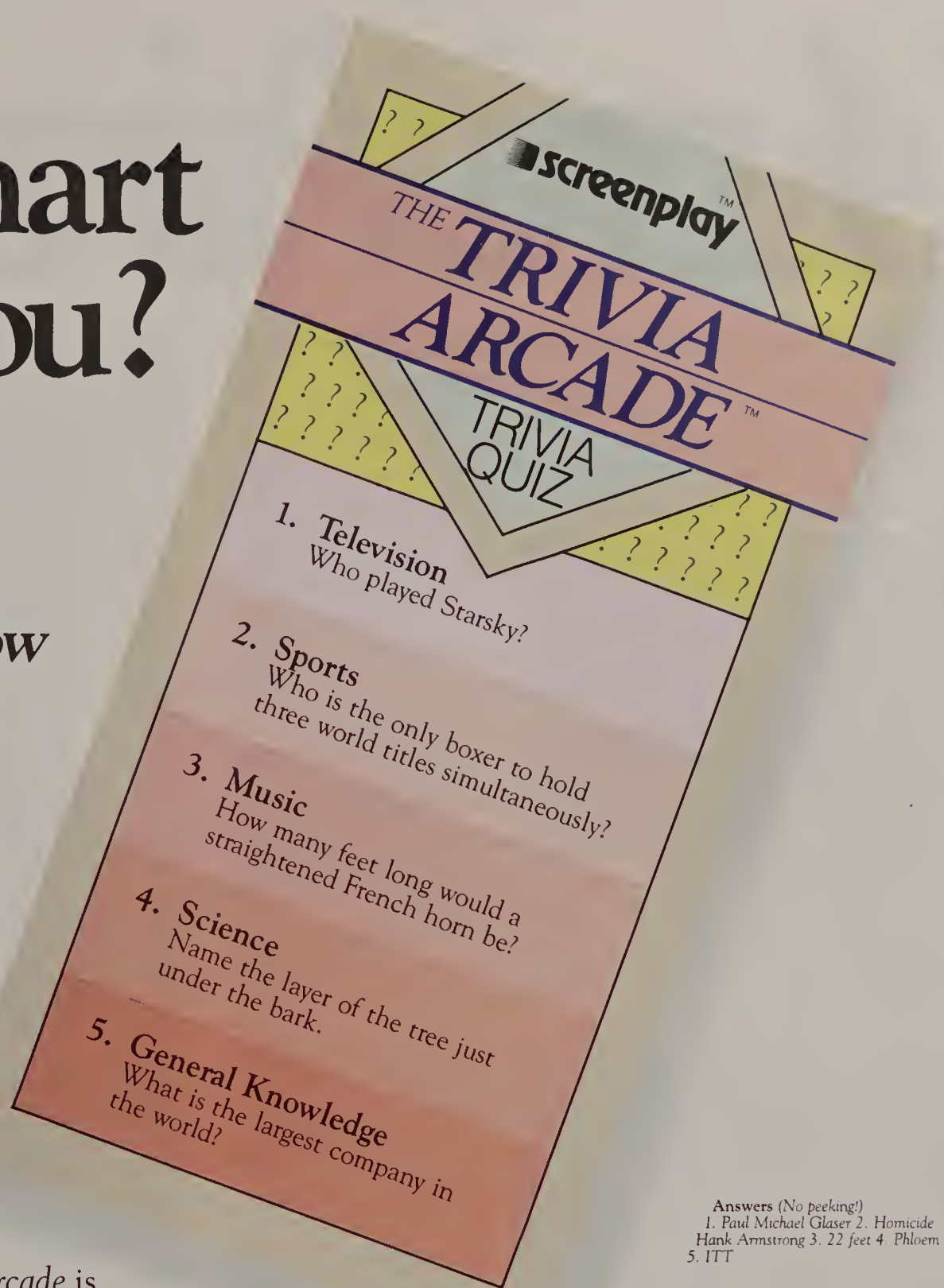
Begin.

Time's up.

Wish you'd done better? Had you been playing *The Trivia Arcade*™ from Screenplay, you might have breezed through this test. *The Trivia Arcade* is a brain-wracking game for one to four players that taxes your recall and tests your reflexes.

Snag a symbol representing Sports, Science, Music, TV or General Knowledge. From a reserve of over 3500, a randomly selected question will be displayed. Correct responses advance you toward the Winner's Circle, a place to gloat over your breadth of knowledge.

And when you've mastered your first set of questions, the *Question Pack I* is available with 4000 more challenging questions in Literature, History, Movies, Comics and General Knowledge.



Answers (No peeking!)
1. Paul Michael Glaser 2. Homicide
Hank Armstrong 3. 22 feet 4. Phloem
5. ITT

Both *The Trivia Arcade* and *The Trivia Arcade Question Pack I* are available on disk for Apple II™ series and Macintosh™, Atari™, Commodore 64™, and IBM PC™ and PCjr™.

See your local dealer or call (800) 334-5470. In Canada call Beamscope—Canada (800) 268-5535.

screenplay™

1095 Airport Rd., Minden, NV 89423

©1984 Screenplay, Inc.

The Trivia Arcade & The Trivia Arcade Question Pack I, Apple II & Macintosh, Atari, Commodore 64, and IBM PC and PCjr, are trademarks of Screenplay, Apple Computer, Inc., Atari, Inc., Commodore Electronics, Ltd., and International Business Machines Corp. respectively.

Circle 118 on reader service card

Looking for

INTRODUCING FRONT DESK™ A BETTER WAY TO MAINTAIN SCHEDULES FOR UP TO 15 PEOPLE, PLACES OR THINGS.

Front Desk™ There's nothing else available that lets you see what's available in so many different ways.

It's a better way for dentist offices to keep their doctors ordered. For health clubs to sort their courts. For schools to schedule their A/V equipment. For companies to allocate their conference rooms. Or for accounting firms to keep account of their CPA's.

In short, it's for anyone who has a lot to allot.

It lets you zoom from one person's calendar to the next. Or zip from a monthly view to a weekly view to a single day view for one person or everyone. All as quick as a click. In fact, when you've got a lot of scheduling to do, nothing can make time fly like Front Desk.

SEE THE PAST. THE FUTURE. AND THE BOTTOM LINE.

Dentists & Assistants	Services	Fee	Total
1 Initial Oral Exam	\$20.00	\$ 318.00	\$ 1,756.00
2 Single X-Ray	3.00	0.00	106.50
3 Bite wing X-Rays	6.00	0.00	81.60
4 Composite 1 Surface	25.00	137.50	332.50
5 Prophyl	26.00	52.00	702.00
6 Extract Single Tooth	40.00	796.00	1,404.00
7 Amalgam/Silve	23.00	588.80	1,423.70
8 Pulp Cap	55.00	0.00	1,463.00
9 Root Canal	80.00	1,280.00	1,568.00
10 Crown, Porc. & Gold	75.00	375.00	6,562.50
11 Crown, Full Gold	140.00	280.00	3,710.00
12 Crown, Temporary	40.00	544.00	1,036.00
13 Non-Billable	\$ 0.00	0.00	0.00
Total Billed	\$ 4,371.00	10,733.00	20,946.30

But Front Desk does more than just let you organize how time is spent. It also gives you powerful tools that let you see how well time is spent.

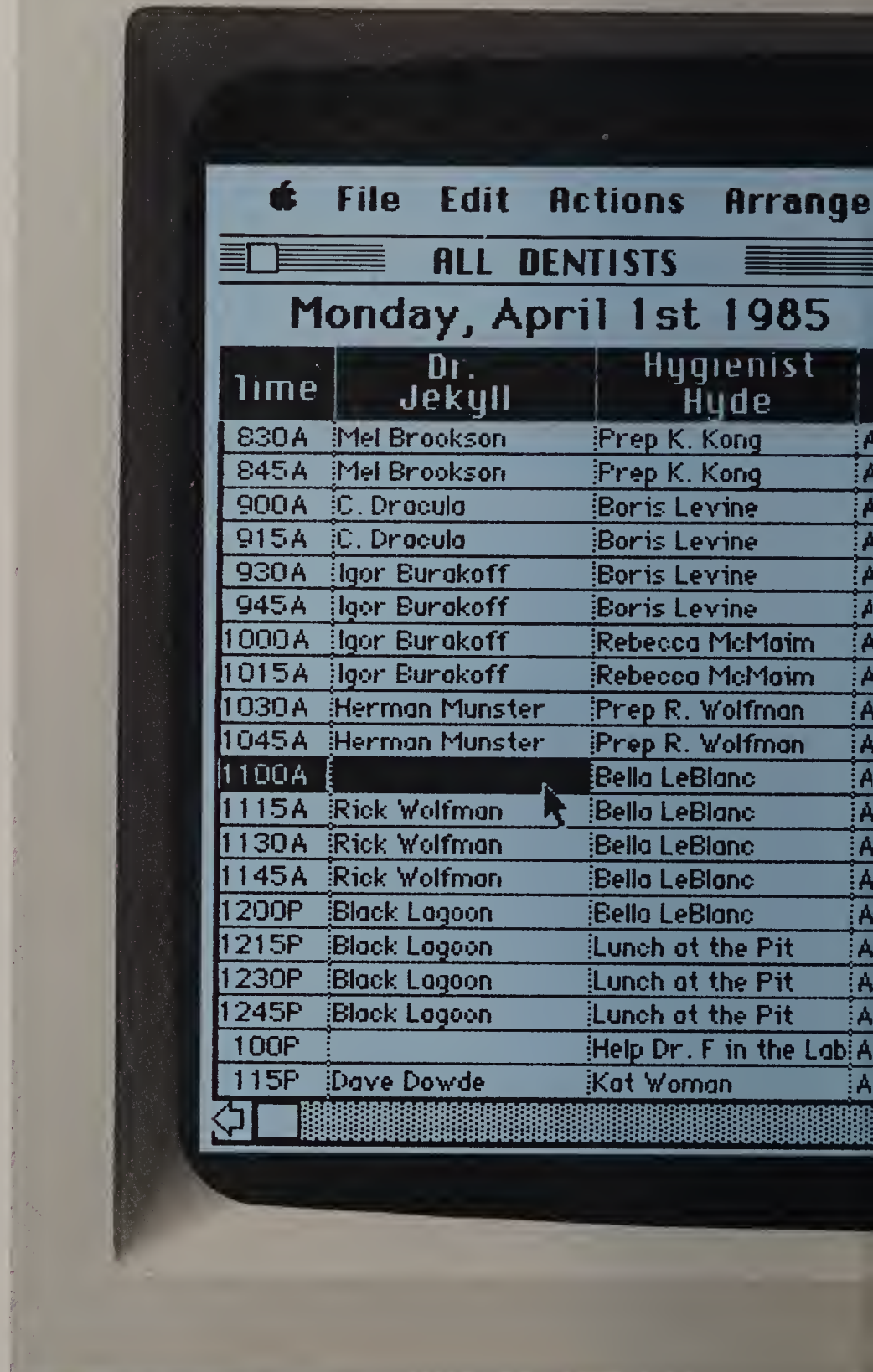
It remembers

what services are performed by each staff member during any particular time period.

So in the click of a mouse you can create a report for last month showing how many hours each dentist in your office spent—or how many dollars they brought in—by cleaning teeth, or filling cavities, or whatever. And you can project how much money each dentist will bring in on those services in the next two weeks or two months. This not only helps you improve the way your cash flows, it helps you make more of it.

LET THE GOOD TIMES SCROLL.

Whether you're scheduling activities for an architect, or engagements for an engineer, a flick of your finger will call up that person's full day calendar, which is preset in whatever time intervals you



© 1984 Layered, Inc.

Time	Name	Phone	Service	Comment	Amt
8:30A	Mel Brookson	529-3733	Exam	Hegd	234.45
8:45A	Mel Brookson				
9:00A	C. Dracula	990-0090			
9:15A	C. Dracula				
9:30A	Igor Burakoff	536-1186	Treatment	Fit for dentures	2,000
9:45A	Igor Burakoff				
10:00A	Igor Burakoff				
10:15A	Igor Burakoff				
10:30A	Herman Munster	437-7000	Management	Dental Flors salesman	no
10:45A	Herman Munster				
11:00A					
11:15A	Rick Wolfman	638-1535	Cleaning	Stained bicuspids	125.00
11:30A	Rick Wolfman				
11:45A	Rick Wolfman				
12:00P	Black Lagoon/Mrs. Jekyll	no	Lunch		
12:15P	Black Lagoon/Mrs. Jekyll				
12:30P	Black Lagoon/Mrs. Jekyll				
12:45P	Black Lagoon/Mrs. Jekyll				
1:00P	Black Lagoon/Mrs. Jekyll				
1:15P	Dave Dowde	676-5617	Fillings	Cavities & Bridge work	4,000

choose. Use the side scroll bar to view the entire day's schedule. Or the bottom scroll bar to see the previous or next day.

a good time?

Services Status

ton Dr. Frankenstein Operatory

ari	Out of Office	Dr. Jekyll
ari	Out of Office	Dr. Jekyll
ari	K. Kong	Dr. Jekyll
ari	K. Kong	Dr. Jekyll
ari	K. Kong	Dr. Frankenstein
ari	K. Kong	Dr. Frankenstein
ari	K. Kong	Dr. Frankenstein
ari	K. Kong	Dr. Frankenstein
ari	K. Kong	Dr. Frankenstein
ari		Dr. Frankenstein
ari	Boston Edison Rep.	Dr. Frankenstein
ari	Boston Edison Rep.	Dr. Jekyll
ari		Dr. Jekyll
ari	Lunch	Dr. Jekyll
ari	Lunch	Available
ari	Lunch	
ari	Lunch	
ari	Lunch	
ari	Lab work	
ari	Lab work	Dr. Jekyll

amazing is that when someone tells you "I'm only available on Tuesdays," a single view of all Tuesdays in April is just a click away.

GET THE BIG PICTURE.

Front Desk not only lets you select the calendar of any one particular dentist, racquetball court, or company fleet car, it lets you select a composite view of every schedule.

By scanning the columns under the initials you can spot every available opening in an instant. And because you can see everyone's calendars in one view, scheduling internal meetings is a snap.

HOW TO PUT PEOPLE IN THEIR PLACE.

Once you find an open time slot, double-click to call up an appointment entry form. Fill it in, click save and the information is recorded on the calendar. Plus you can cut

or copy and paste information from any time slot to rearrange schedules in seconds. And print out copies of any view of any calendar at any time.

DON'T WASTE ANOTHER DAY.

Cancel your next appointment and rush down to your computer store.

And tell them you're looking for a good time.

SEE A MONTH OF SUNDAYS.

Tap your mouse and Front Desk will put a whole week of appointments on the screen at once. But what's really

LAYERED

Layered Incorporated 85 Merrimac St.
Boston, MA 02114 (617) 423-9041
Circle 125 on reader service card



Spreadsheets Printed in Style

Printing a Multiplan spreadsheet is not as cut-and-dried as it may at first seem

Lon Poole

Multiplan is a spreadsheet program used for bookkeeping, preparing budgets and sales projections, financial analysis, and record keeping. The program adds the dynamic power of a microcomputer to the static design of a manual spreadsheet, so that formulas and functions can be entered into the cells. You can construct tables that model the relationships between elements on the spreadsheet, and the computer will recalculate the worksheet whenever information is entered or changed.

If you work with *Multiplan*, you undoubtedly know that typing numbers in the spreadsheet's rows and columns and doing calculations is only part of the job. Once you have finished your work on screen, you probably want to print out your document on paper. When you choose Print from the File menu, the program's default format lays out the rows and columns on U.S. letter-size paper. If the spreadsheet requires more than one page, the program automatically inserts page breaks and creates margins—1 inch on the top and bottom of the page and $\frac{3}{4}$ inch on each side. Aside from these enhancements, your information looks the same as it does on the screen, with row and column numbers, grid lines, and text in the same font style as the screen's.

Printing your spreadsheet in *Multiplan*'s default format may not be the best way to present the information on paper, however. Most people want to display their information in a way that conforms to the business report styles to which they are accustomed. To give you flexibility in printing your work, *Multiplan*'s designers included several alternatives that let you customize your printed spreadsheets.

By adjusting page boundaries, applying either of two font and font size combinations, and choosing page layout options such as setting margins or including headers or footers, you can customize your printed spreadsheets. The printout of the worksheet in Figure 1 is an example of how the standard *Multiplan* printing format can be modified.

Designing Your Spreadsheet

Multiplan uses three criteria to decide where to place page boundaries: paper size, margin, and column width. The combination of paper size and margin width, which you set in the Page Setup dialog box, determines how much space is available on the page. Given those dimensions, *Multiplan* simply fits as many columns across and rows down as possible in the available space.

Page boundaries automatically appear in the spreadsheet window as lines of dashes between rows and columns; these are easy to distinguish from the usual dotted grid lines. You can spot these dashed lines by scrolling through the worksheet (see Figure 2).

If *Multiplan* draws page boundaries in places you dislike, you can set your own. Choosing Set Page Break from the Options menu draws a page boundary above a selected row, to the left of a selected column, or both above and to the left of a selected cell. If you change your mind about a page break you set, select the same row, column, or cell again, but this time choose Remove Page Break from the Options menu.

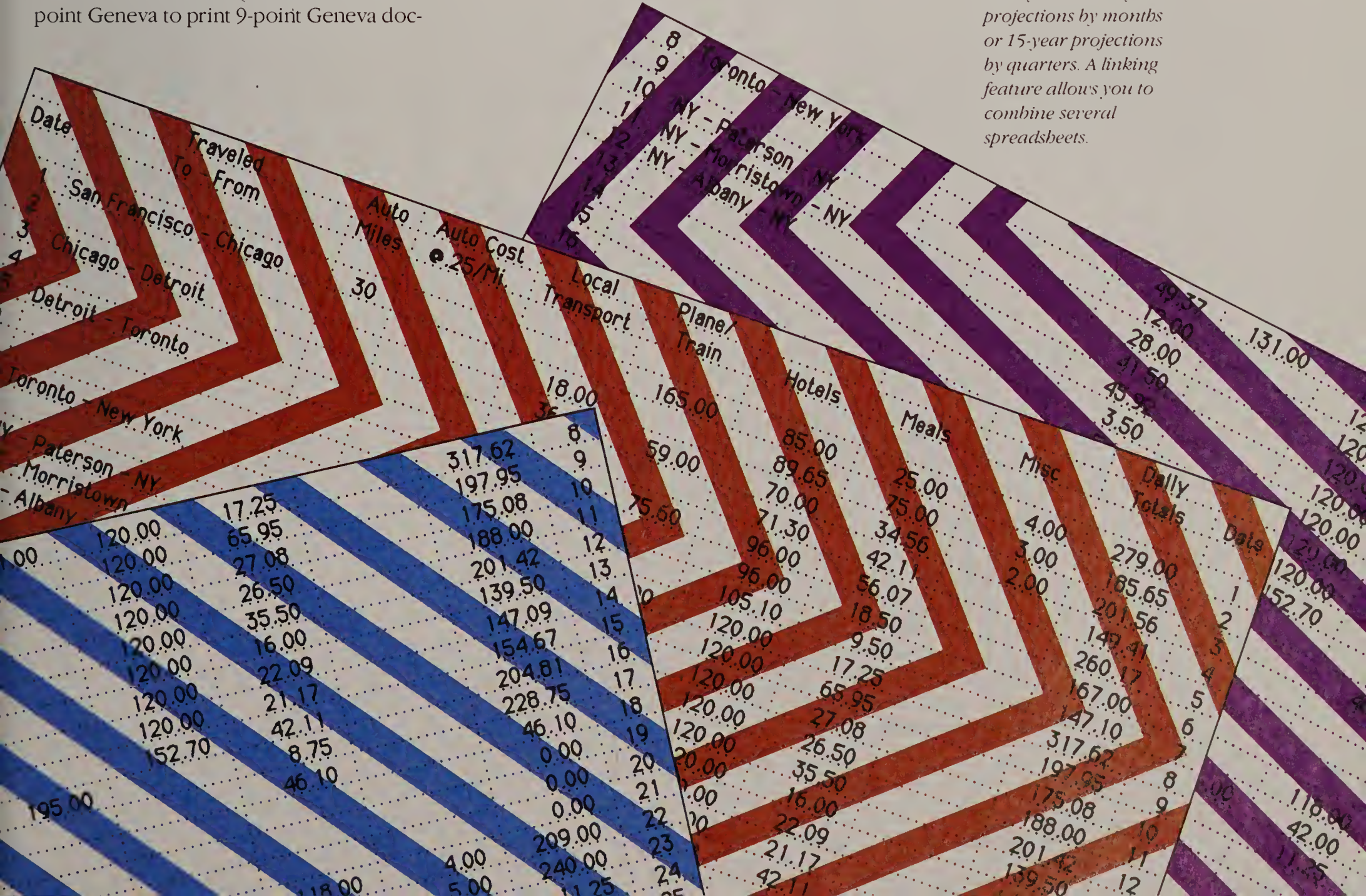
8	Toronto - New York
9	NY - Paterson - NY
10	NY - Morristown - NY
11	NY - Albany - NY
12	30
13	25.00
14	

At first glance it might seem that all *Multiplan* spreadsheets must print out in 10-point plain Seattle the way they appear on the screen. After all, *Multiplan* has no font, font size, or style menus for changing text style. But one alternative font exists. With the help of the Font Mover utility, you can convert *Multiplan*'s font from 10-point Seattle to 9-point Geneva. All you do is remove Seattle-10 and Seattle-20 from the System file on the *Multiplan* disk and copy Geneva-18 to that file. (The Mac uses 18-point Geneva to print 9-point Geneva doc-

uments in high resolution.) Here are step-by-step instructions for changing the font:

- Initialize a new disk or erase an existing disk to become your 9-point Geneva *Multiplan* disk.
- From the System disk, copy the System Folder and the Font Mover application to the new disk. Use a System Folder that contains version 1.1 of the Finder, together

Multiplan has 16,065 cells arranged in 63 columns and 256 rows. The program enables you to do 5-year projections by months or 15-year projections by quarters. A linking feature allows you to combine several spreadsheets.



- From the *Multiplan* Master disk, copy the *Multiplan* application icon and the Multiplan.Help icon.
- Open the Font Mover application on the new disk.
- Remove all fonts from the System file except Geneva-18 and the four fonts marked with asterisks: Chicago-12, Geneva-9, Geneva-12, and Monaco-9.
- Quit the Font Mover application.
- Optionally, drag the Font Mover from the *Multiplan* disk to the Trash to make more room on your new *Multiplan* disk.

You can use the 9-point Geneva version of *Multiplan* with new and existing spreadsheets. When you open an existing worksheet, however, *Multiplan* maintains its original column width in inches. Thus, you will see the same number of columns

To get maximum benefit from the smaller font size, you have to reduce the width of each existing column. To make a column narrower, position the pointer on the column boundary in the column header area and drag the boundary to the left. Or select a column, choose **Column Width** from the **Format** menu, and specify a smaller column width in the dialog box that appears.

This custom-formatted worksheet shows the space savings you can achieve in a spreadsheet printed on letter-size paper in Tall orientation. By adjusting the page boundaries and margins, using a 9-point font size, and setting narrower column widths, you can maximize the amount of information on the page.

Marketing Department

Custom-Fitting Your Spreadsheet

Multiplan adjusts the page boundaries of a spreadsheet automatically so that you can fit your information on any of four sizes of paper. The table labeled "Paper Size" identifies the possibilities. To prepare for printing, choose Page Setup from the File menu. A dialog box appears, showing several page layout options (see Figure 4). The options include the size of the paper, the orientation of the spreadsheet on the page, whether to print grid lines and row and column numbers, the text of one-line headers and footers, and margin settings. You have to set the options only once for a spreadsheet, because *Multiplan* saves them on disk along with the spreadsheet.

Tall orientation gives you normal up-right printing, with the top line of the spreadsheet appearing at the top of the page. The worksheet in Figure 1 is printed in Tall orientation. In contrast, Wide orientation results in sideways printing, which is useful when you want to show many columns across a page instead of many rows up and down. In *Multiplan*, Tall Adjusted orientation produces the same result as Tall.

Multiplan can print headers and footers in the top and bottom margins of every page. Whatever you type in the Page Header entry box appears centered 1/2 inch from the top of every printed page. Similarly, the contents of the Page Footer entry box are printed centered 1/2 inch from the bottom edge of every page.

You may not be able to see a long header or footer all at once in its entry box, but you can use the I-beam pointer to scroll the text left or right within the entry box. Simply place the pointer anywhere over the header text, press the mouse button, and drag the pointer to either end of the entry box. When the pointer reaches the end of the box, the running head text starts to scroll slowly in the opposite direction. The further you move the pointer from the edge of the entry box, the faster the text scrolls. Headers and footers can include special commands that mark a position for the date, time, or page number.

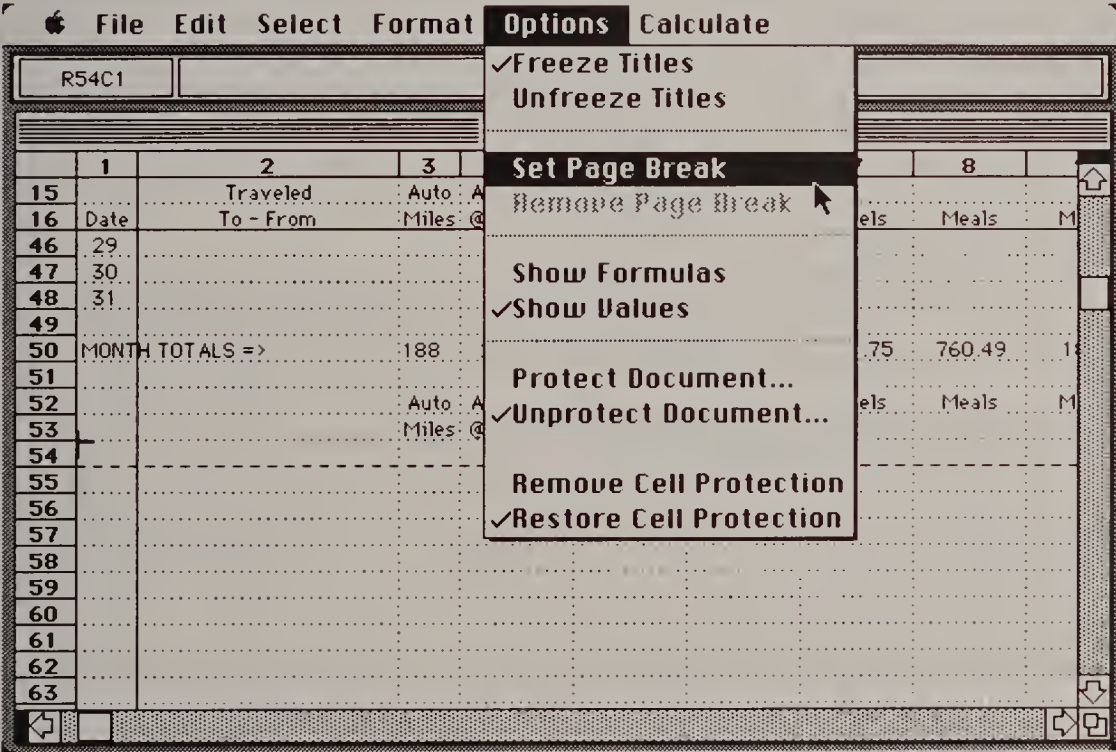


Figure 2
The lines of dashes indicate the page boundaries. You can change the page boundaries by selecting the row, column, or cell where you want to break the page and choosing Set Page Break from the Options menu.

	1	2	3
15		Traveled	Auto
16	Date	To - From	Miles
17			
18	1	San Francisco - Chicago	30
19	2		
20	3	Chicago - Detroit	
21	4		
22	5	Detroit - Toronto	
23	6		
24	7		
25	8	Toronto - New York	
26	9		
27	10	NY - Paterson - NY	
28	11	NY - Morristown - NY	
29	12	NY - Albany - NY	

	1	2	3
15		Traveled	Auto
16	Date	To - From	Miles
17			
18	1	San Francisco - Chicago	30
19	2		
20	3	Chicago - Detroit	
21	4		
22	5	Detroit - Toronto	
23	6		
24	7		
25	8	Toronto - New York	
26	9		
27	10	NY - Paterson - NY	
28	11	NY - Morristown - NY	
29	12	NY - Albany - NY	

Figure 3
This figure shows the difference between a standard spreadsheet that uses 10-point Seattle and one that uses 9-point Geneva. To create a worksheet with more columns and rows, you need to use the Font Mover utility to substitute Geneva for Seattle.

Multiplan replaces the markers with the actual date, time, and page number when it prints the spreadsheet. You can embed other commands that align parts of a header at the left edge, right edge, or center of the page. The table labeled "Command Codes" lists the commands.

The normal *Multiplan* top and bottom margins are each 1 inch high. The standard left and right margins are each $\frac{3}{4}$ of an inch wide. On an 8½- by 11-inch sheet of paper, the standard margins leave a 7- by 9-inch

space for spreadsheet rows and columns. If you enlarge the margins, you reduce the number of rows or columns on a page. If you shrink the margins, you increase the number of rows or columns on a page.

Rarely do the preset margins exactly fit the spreadsheet. Usually a page-sized piece of the worksheet is narrower than the space allowed by the side margins. In that case, *Multiplan* automatically widens both margins by the same amount, centering the spreadsheet between them. The headers also do not use the side margins specified in the Page Setup dialog box. Header margins are always at least $\frac{1}{4}$ inch narrower, making the running head lines at least $\frac{1}{2}$ inch wider than the spreadsheet.

However, you can still type more text than will fit in the available header or footer space. In that case, *Multiplan* prints the center text 8 inches wide, lopping off an equal amount from the beginning and the end of the running head. To make sure you don't lose characters from the ends of your headers and footers, keep the text short enough to fit inside the margins.

Printing with a Flair

When you choose Print from the File menu, a dialog box appears (see Figure 5). The box gives you a choice of print quality and lets you specify the part of the spread-

Figure 4

The Page Setup dialog box lets you control the appearance of printed spreadsheets. The left margins have been reset to $\frac{1}{4}$ inch from the normal $\frac{3}{4}$ -inch setting. You need only set the printing format for a worksheet once, because *Multiplan* saves the page setup information on disk with the document.

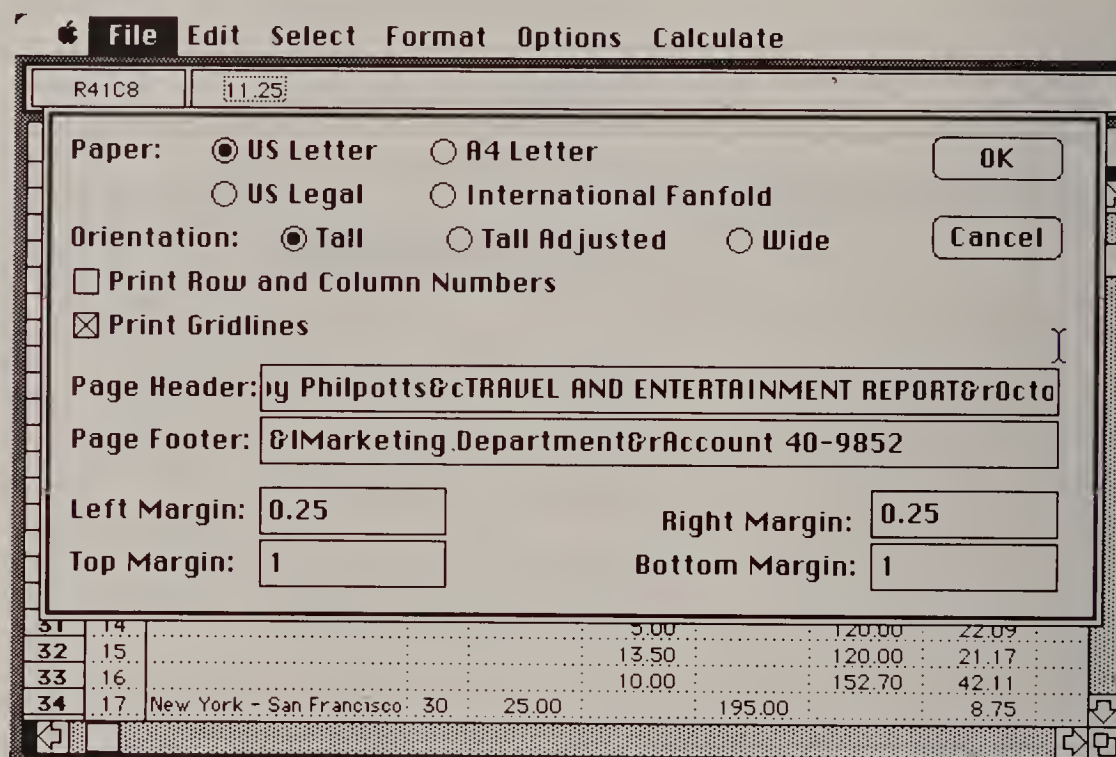
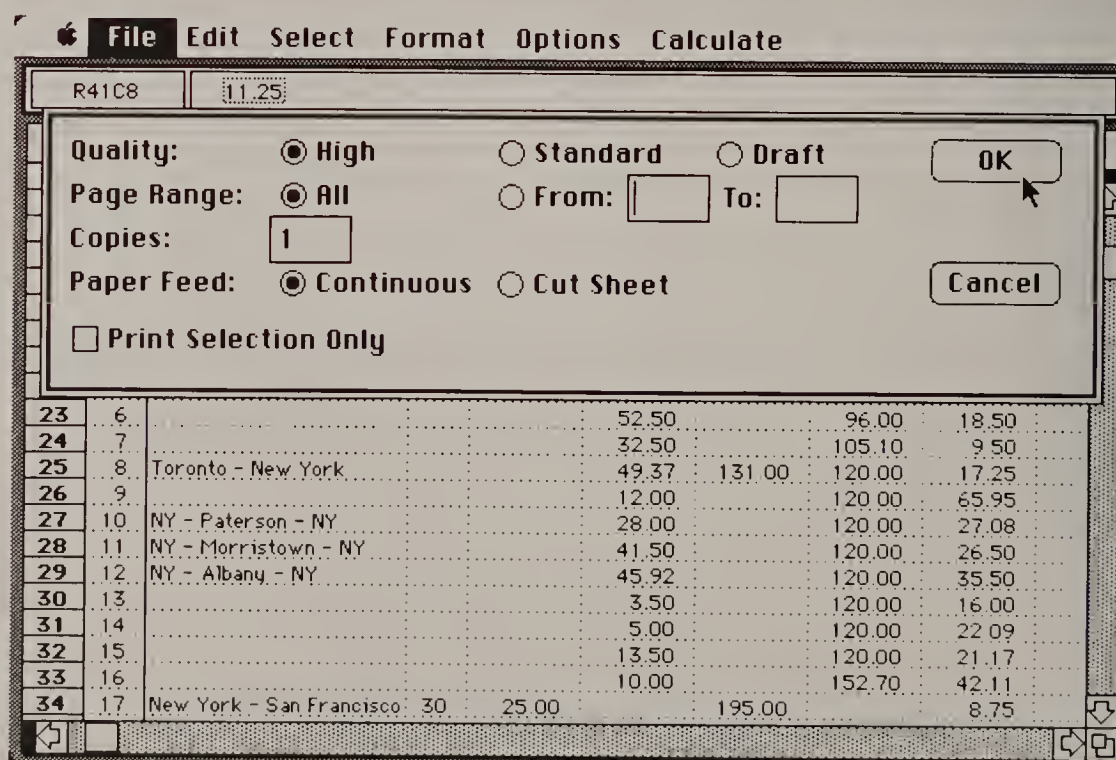


Figure 5

The Print dialog box lets you specify the print quality, a range of pages to print, the number of copies, the type of paper, and a selected portion of a spreadsheet to print. Draft printing is faster than printing in high or standard resolution, but it doesn't print grid lines and uses a font unlike the one displayed.



sheet to print, the number of copies to make, and the style of paper you are using.

High-quality printing produces the best-looking report—if the right font is in the System file. For a normal 10-point Seattle spreadsheet, you need 20-point Seattle in the System file. For a 9-point Geneva worksheet, you need 18-point Geneva. As mentioned before, the larger sizes are reduced 50 percent during printing, yielding the proper size type with a denser dot pattern than standard quality (which uses whatever font size the spreadsheet is displayed in). Standard-quality printing, however, is about twice as fast as high-quality printing.

Draft-quality printing is fast, but the image doesn't match the look of the displayed spreadsheet. Draft quality prints row and column numbers, but not grid lines. The font design is unlike the font displayed on the screen, and the font does not contain many special letters and symbols that are typed with the Option key. You cannot print in draft quality if you chose Wide orientation (sideways printing) during page setup.

Paper	Size
U.S. Letter (Letter size)	8½ by 11 inches
U.S. Legal (Legal size)	8½ by 14 inches
A4 Letter (European letter size)	8¼ by 11⅓ inches
International Fanfold (European continuous form)	8¼ by 12 inches

Paper Size

Multiplan offers four paper sizes and two printing orientations (Tall and Wide). When you choose one of the options, the program automatically adjusts the page boundaries to accommodate the paper size and orientation.

Ribbon condition and paper grade also affect printing quality. A letterhead bond type of paper gives the best results. Before clicking the OK button to start printing, make sure that your printer is connected to the Macintosh printer port and is switched on. Insert a fresh sheet of paper; if you are using continuous paper, set the paper at the top of a new page. With an Imagewriter, make sure the Select light on the printer control panel is lit.

Before *Multiplan* starts printing in standard or high quality, it takes a few seconds to copy the spreadsheet into an area of memory on disk. Then the program uses some of the memory space the worksheet formerly occupied for instructions that actually do the printing. Once printing begins, you can stop it by pressing the ⌘ and period keys simultaneously. *Multiplan* stops sending information to the printer almost immediately, but printing may not cease for several seconds. The printer has to finish printing any residual information it has already received and stored in its own memory.

Try experimenting with these *Multiplan* print options on your own spreadsheets—the combinations are too numerous to illustrate here. Don't miss sideways

Command	Function
&L	Align the text that follows at the left margin
&C	Center the text that follows
&R	Align the text that follows at the right margin
&P	Print the page number
&D	Print the current date
&T	Print the current time

Command Codes

Headers and footers in a spreadsheet can include special commands that specify a position for the date, time, and page number. You can also give instructions to justify parts of a header or footer.

printing (the Wide option in the Page Setup dialog box), which this article only touched on briefly. It may make the difference between your worksheet fitting on a page or not.

If you still can't get the look you want—maybe you want to use boldface and italic text styles—one other road is open to you. Copy your entire spreadsheet to the Clipboard and paste it into a *MacWrite* document. The worksheet columns will line up with the tabs you set in *MacWrite* formatting rulers, and you can change text fonts, sizes, and styles to your heart's content. □

Lon Poole is a Contributing Editor of Macworld and the author of several computer books, including *The Apple II User's Guide*.

Portions of this article were adapted with permission from Lon Poole's *MacWork/MacPlay: An Assortment of Creative Ideas for Fun and Profit on Your Apple Macintosh* (Microsoft Press, 1984).

Microsoft Multiplan
Microsoft Corporation
10700 Northup Way
Bellevue, WA 98004
206/828-8080
List price: \$195

**Now that you have the
computer for the rest of us,
do yourself another favor.
Read this ad.**



Like most Macintosh™ users, you probably don't realize the many benefits of the International Apple Core.™ Or what we can do for you and your Mac.

The International Apple Core is a nonprofit organization of Apple users and user groups. We're just like your Macintosh, friendly and helpful.

We're dedicated to providing education, information and support to users of Macintosh and Apple products.

You can enjoy all the special benefits we have been providing user groups since 1979. You may share information on new applications. Or learn the latest on Macintosh products. Or keep up on Apple events.

If you'd like to join a local user group or contact other Macintosh enthusiasts, we can help.

A membership that pays you.

As a member of IAC you nearly get paid with what you will save.

Our individual membership brings you discounts on public domain software and computer insurance. Micro Disk Minder™ and

Penta Pac™ to keep your 3.5s in order. Macintosh publications and products as soon as they are available to the IAC. And a subscription to MACWORLD. Or if you have a subscription now, it will be extended for another twelve issues.

You'll receive all this and more for only \$40 yearly membership fee.*

If you get together with other Macintosh owners, you're on your way to forming a user group. And that's good. Because you can benefit even further from the IAC.

Our user group membership includes a subscription to MACWORLD, plus group purchases at bigger discounts. All the benefits of an individual membership and more. For not much more. Just \$65 yearly.*

If you've considered forming a user group, you'll want our Club Management Binder. For only \$35 you receive sample bylaws, ideas on forming and running your group, and electing officers and directors. All enclosed in a hard bound ring binder with four disks (Apple II format).

Individually or as a group you can't lose. So fill out the membership coupon below. And do yourself another favor.



© 1984 International Apple Core

Macintosh is a trademark licensed to Apple Computer, Inc.

Micro Disk Minder and Penta Pac are trademarks of International Datawares, Inc.

Apple and Apple II are registered trademarks of Apple Computer, Inc.

*Membership prices are for the United States and Canada only

I want more for me and my Mac. Please see my choice below:

- ☐ \$40 Individual Membership (US, Canada)
☐ \$65 User Group Membership (US, Canada)

International Memberships

- ☐ \$100 Individual Membership
☐ \$125 User Group Membership
(These include airmail postage for MACWORLD.)
☐ \$35 Club Management Binder (Apple II format disks)

- ☐ Payment enclosed (U.S. funds only)
☐ VISA ☐ MasterCard

Charge Card No.

□□□□□□□□□□□□□□□□□□□□

Interbank No.

□□□□

Expiration Date

□□ □□ □□ □□
MO DAY YEAR

Signature

Name

Address

City

State/Zip

Country

Mail to:

International Apple Core
Dept. MAC
908 George Street
Santa Clara, CA 95050

Circle 107 on reader service card

Save 50%

Sign me up!



I want to subscribe to *Macworld*.
Please send me 12 issues.

12 issues for ~~\$48~~ \$24!

I'll save 50% off the single copy
price and 20% off the regular
subscription rate.

☐ Payment enclosed ☐ Please bill me.

Charge my ☐ Visa ☐ MasterCard interbank # _____

Card # _____ exp. date _____

Signature _____

Or call toll-free: 800/247-5470

Name _____

Company _____

Address _____

City, State, Zip _____

☐ This is a renewal (attach mailing label above)

Macworld will be published in May, July and September of 1984
and will begin monthly publication in November 1984.

Please allow 6-8 weeks for delivery of your first issue. Outside the
U.S. subscriptions must be prepaid in U.S. funds. Outside the U.S. and
Canada add \$12 per 12 issues for surface mail or \$60 per 12 issues
for airmail.



NO POSTAGE
NECESSARY
IF MAILED IN
UNITED STATES

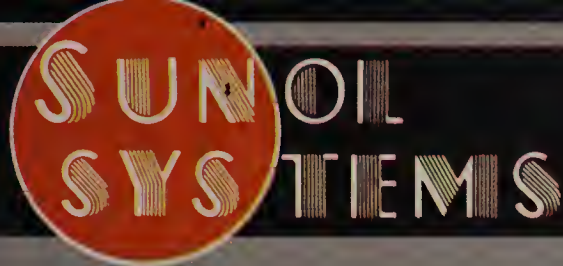
BUSINESS REPLY CARD

FIRST CLASS PERMIT NO. 79 BERGENFIELD, NJ

POSTAGE WILL BE PAID BY ADDRESSEE

Macworld
Subscription Department
P.O. Box 20300
Bergenfield, New Jersey 07621





**Don't Sit Under
The Apple Bus With
Anyone Else But Us**

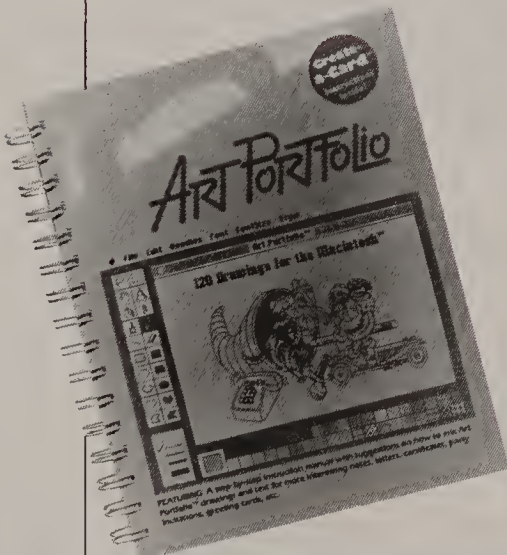
Creative Inspiration

Give inspiring new programs for your Macintosh™ from Axlon. You'll find these programs at better Apple dealers right now. (Or any day now.)

One

Art Portfolio™ \$59.95

A diskfull of professionally drawn artwork with the best 100 page manual of tips and ideas available! If you like to MacPaint™ and wish to unleash your creativity, then Art Portfolio™ is for you. It includes an index of the artwork and hundreds of ideas to create exciting memo's, letters, cards, etc. All the images are the right size to use in your documents or you can expand, reduce or modify them with minimal distortion. Create-a-Card™ instructions include ideas for making your own greeting cards.



Two

The Card Shoppe™ \$59.95

Here's everything you and your MacPaint program need to get into the card-making business.

- Special drawings, ranging from the obvious to the obscure.
- A complete, exuberant calendar of holidays and greeting card occasions, if you need one to create a card.

► A see-through formatting overlay for your Mac screen that lets you position your art and words before you print, so you know it will fit properly on your card when folded.

► Samples of paper and envelopes for your ImageWriter. Best of all, The Card Shoppe gives you a ton of creative ideas for your own special cards for your own special purposes.



Three

MacMatch™ \$49.95

This is one of the first of a new breed: Native Macintosh games. Our software gamemakers have taken their inspiration from the tv game show, Concentration™, and have built it on the Mac's quickness and graphics power. When you match two squares, you get clues about the hidden puzzle. It comes with puzzles, but the real beauty is that you

can make up your own, as complex or simple as you like. You'll never get bored. And think what party puzzles might look like...

Four

MouseTracks™ \$49.95

We put Mac's considerable graphics skills through the loops to develop an eye-popper for Mac's first mouse game.



You will zoom an animated mouse through a maze-like environment avoiding a bad kitty cat intent on supper. There are plenty of perils and rewards for the skillful. MouseTracks shows everyone how much fun Macintosh can be.

Five

Typing Avalanche™ \$59.95

Since man does not live on art alone, but by lots of words that flow from the mouth of Mac, we've commissioned the first typing strategy program for the Mac. It's aimed at the poor duck who somehow got through school without learning touch typing. (The rest of us, in other words.) It's fast paced. It's fun. And it works. Play it a while, and you'll suddenly realize you are a touch typist. Someday the schools will catch up.

New from Axlon. Now at your Apple Computer Dealer.

If you can't find it there, call us for the name of a nearby dealer: 408-747-1900.



Axlon Inc.
1287 Lawrence Station Rd.
Sunnyvale, CA 94089

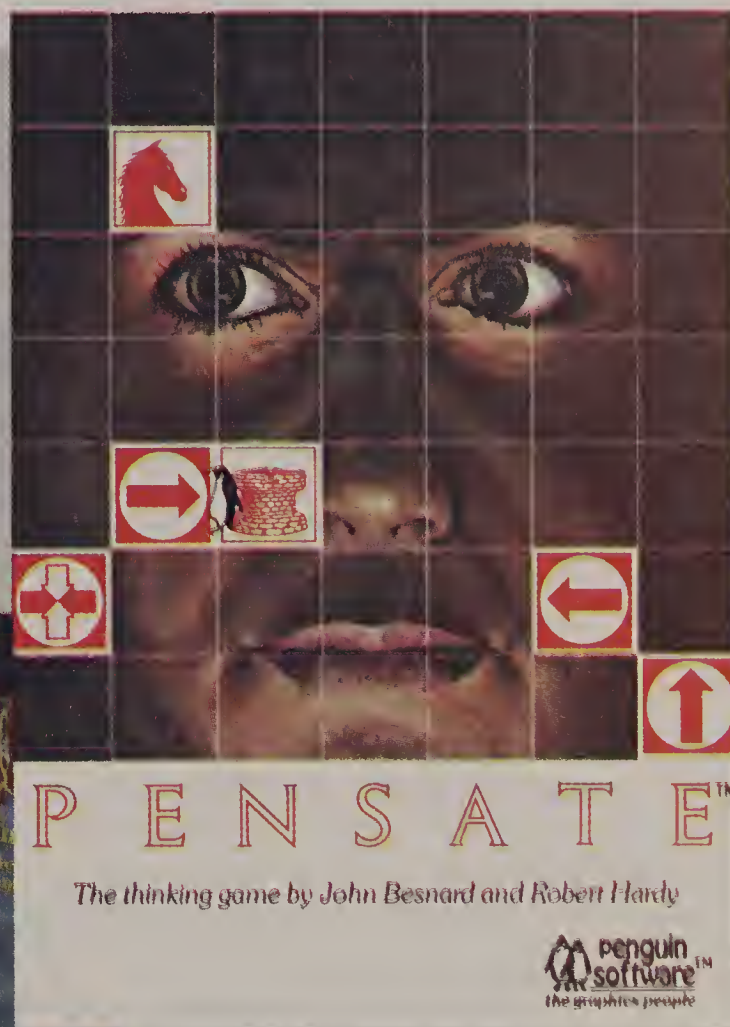
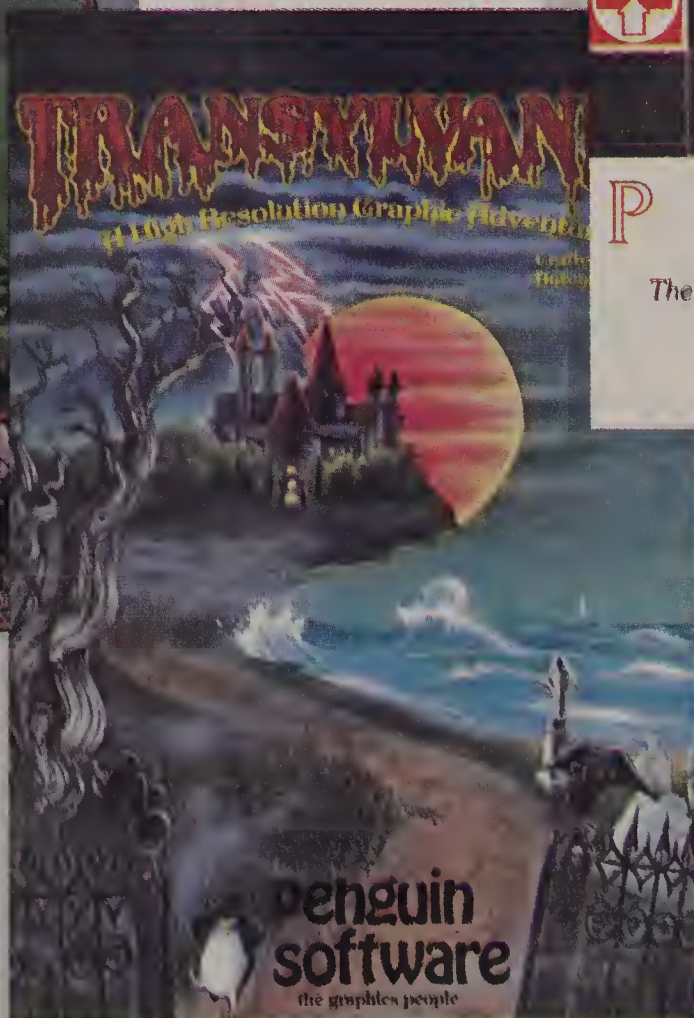
ADVENTURE STRATEGY FANTASY

We cover
the spectrum
for Macintosh™
entertainment.




Xyphus—Enter the Lost Continent of Arroya in search of Xyphus, Lord of Demons. Six increasingly difficult scenarios, four-player independent movement, plus a wide variety of spells and weapons make this fantasy role-playing game like no other you've ever seen.

Transylvania—You have until dawn to save a kidnapped princess from a land haunted by werewolves, goblins, vampires, and wizards in this award-winning graphics adventure.



Pensate—Outwit the computer's legions of pieces as you make your way across the playfield. Ten distinct types of opposing pieces and nine levels of difficulty provide endless variety and challenge in this game of strategy and thought.

All Macintosh versions by Robert Hardy.
Write or call for a free catalog.

 **penguin
software™**
the graphics people

Macintosh is a trademark of Apple Computer, Inc.
Penguin Software is a trademark of Penguin Software, Inc.

830 Fourth Avenue • P.O. Box 311 • Geneva, IL 60134 • (312) 232-1984

Circle 150 on reader service card



HOW TO UNSCRAMBLE YOUR NEST EGG.

It doesn't take a computer to tell you that money can't buy you happiness.

But there is a piece of best-selling personal computer software that can make you a lot happier about your money.

And you're looking at it.

Making sense of your dollars.

Dollars and Sense™ saves you money by organizing your money. By giving you the clearest picture you've ever had of your financial behavior.

It defines budgets along any lines you like. Monthly or annually, fixed or variable. On up to 120 accounts.

It can write checks, make transactions automatically, even remind you to pay your bills.

And as time goes by, it tells you precisely how you're doing. With a complete set of reports and full-color graphs* that come up on screen or print out on paper. At the touch of a key.

And all you have to do is spend a few effortless minutes each week telling your personal computer** what came in and what went out.

Many happy returns.

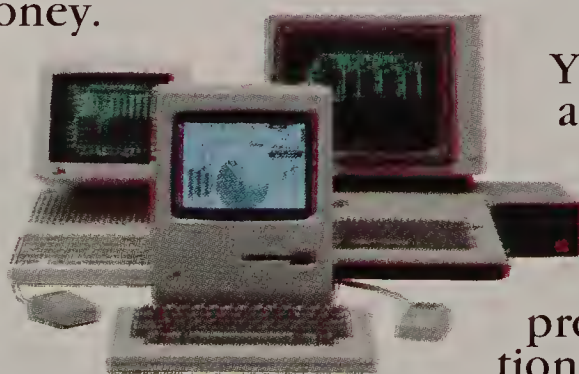
You can use Dollars and Sense around the house or around the office.

And around April 15 you'll be glad you did. Because a few simple keystrokes will provide you with all the information you need to settle up with Uncle Sam.

Since your tax liability tomorrow is affected by the decisions you make today, Monogram will soon be introducing a new program, called FORECAST.™

With Dollars and Sense and FORECAST, you'll be able to estimate your taxes for up to five years. Or look at this year and ask "what if?" up to five different ways.

To keep Uncle Sam from raining on your parade.



*Macintosh™ version
in stores now.*

MONOGRAM

8295 South La Cienega Blvd., Inglewood, CA 90301 (213) 215-0529

*Color monitor required. Graph printing may not be available on Apple® II series.

**Available for Apple IIe, IIc and Macintosh. Also available for IBM® PC, PC XT, PCjr and compatibles, the TI Professional and other popular personal computers.

Circle 117 on reader service card

WHOLESALE +8% PRICING

OUR 400 PAGE CATALOG OF 20,000 COMPUTER PRODUCTS

14 TO 28 DAY SOFTWARE RENTALS, AT 20%[†]

FOR NETWORK MEMBERS ONLY!

Listed below are just a few of the over 20,000 products available at our EVERYDAY LOW PRICES! All software below is priced in Macintosh format. The NETWORK carries software for IBM, Apple II, CP/M, Kaypro and over 50 other popular systems.

GAMES & EDUCATIONAL

(Please add \$1 shipping and handling for each title ordered from below.)

Axlom Art Portfolio	39.00*	Infocom Zork II	29.97*
Blue Chip Baron	35.97*	Infocom Zork III	29.97*
Blue Chip Millionaire	35.97*	Infocom Infidel	29.97*
Blue Chip Tycoon	35.97*	Miles Computing Mac the Knife	23.40*
CBS Software Murder by the Dozen	20.97*	Mirage Concepts Trivia	29.97*
Hayden Sargon III	29.97*	Origin Software Oger	35.97*
Hayden DaVinci—Houses	29.97*	Penguin Pensate	20.97*
Hayden DaVinci—Interiors	29.97*	Penguin Transylvania	20.97*
Hayden DaVinci—Landscapes	29.97*	Scarborough Run for the Money	29.97*
Hayden Word Challenge	23.97*	Sierra On-Line Frogger	23.97*
Infocom Deadline	35.97*	Simon & Schuster Typing Tutor III	29.97*
Infocom Enchanter	29.97*	T/Maker Click Art	29.97*
Infocom Planet Fall	23.97*	Videx Fun Pack	23.40*
Infocom Seastalker	23.97*	Videx Mac Checkers & Reversi	29.40*
Infocom Sorcerer	29.97*	Videx Mac Vegas	35.40*
Infocom Suspended	35.97*	Videx Mac Gammon & Cribbage	29.40*
Infocom Zork I	23.97*		

BUSINESS SOFTWARE

(Please add \$2.50 shipping and handling for each title ordered from below.)

Desktop Software 1st Base	117.00*	Microsoft Word	110.00*
Dow Jones Software Straighttalk	45.00*	Odesta Helix	237.00*
Living Video Text Think Tank	75.00*	Software Publishing PFS: File & Report Bundle	108.00*
Main Street Main Street Filer	177.00*	Software Publishing PFS: File	68.00*
Megahaus Megamerge	75.00*	Software Publishing PFS: Report	68.00*
Megahaus Megaliler	117.00*	Stoneware DB Master	195.00*
Microsoft Basic	85.00*	Telos Software Filevision	117.00*
Microsoft Chart	71.00*	Tronix/Monogram Dollars & Sense	89.97*
Microsoft File	110.00*		
Microsoft Multiplan	105.00*		

HARDWARE

(Add 2% to the member price for each item for shipping and handling.)

COMPLETE SYSTEMS

Apple Lisa All Configs Available	CALL
Apple Macintosh Base System	1,580.00*
Apple //c All Configs Available	860.00*
Apple //e 100% Starter System	1,112.00*
Columbia Desktop & Portable Systems	CALL
Eagle Desktop PC and Spirit Portables	CALL
IBM PC 2 DSDD Floppy Drives/256K	1,625.15*
IBM Hard Disk 1 Floppy/10Mb Hard Disk/256K	2,250.15*
NEC Notebook (New Lower Price)	420.00*
Sanyo MBC-550 "Lowest Cost MS-DOS System"	640.00*
Tava Complete IBM compatible	1,475.00*
Texas Instruments Professional	CALL

DISK DRIVES

Apple 400KB External Drive	312.00*
Corvus 5.5 MB Hard Drive	1,295.00*
Corvus 11.1 MB Hard Drive	1,995.00*
Corvus 16.6 MB Hard Drive	2,295.00*
Corvus 45.1 MB Hard Drive	3,595.00*
Davong 5 MB External Hard Disk	1,496.00*
Davong 10 MB External Hard Disk	1,800.00*
Davong 15 MB External Hard Disk	2,100.00*
Davong 21 MB External Hard Disk	2,480.00*
Davong 32 MB External Hard Disk	3,000.00*
Davong 40 MB External Hard Disk	3,380.00*
Tecmar 10 MB Mac Drive	1,350.00*
Tecmar Mac Drive Upgrade	1,295.00*

MODEMS

Anchor Automation Volkmodem "G" Cable	7.97*
Apple Modem 300	169.00*
Apple Modem 1200	371.00*
Microcom Mac Modem	390.00*
Novation Cat Communication System	324.00*
Prometheus MacPack	322.00*

PRINTERS

Apple Imagewriter 10" Carriage	446.00*
Apple Imagewriter 15" Carriage	530.00*
Okidata ML-93/Mac/Apple 15" Platen/160 CPS/Imagewriter Look-Alike	670.00*
Okidata ML-92/Mac/Apple 10" Platen/160 CPS/Imagewriter Look-Alike	470.00*

ACCESSORIES

(Freight minimum \$1 per item)

Apple Macintosh Carrying Case	74.00*
Apple Macintosh Security Kit	37.00*
Apple Numeric Keypad	74.00*
Art Sci Magic Phone	119.97*
Innovative Concepts Flip N File II	28.08*
Innovative Concepts Flip N File Micro (25)	6.69*
Kensington Disk Case	20.00*
Kensington Dust Cover	8.25*
Kensington Starter Pack	54.00*
Kensington Surge Protector	33.47*
Kensington Swivel	21.00*
Kensington Portable Modem	91.00*
Maxell Mac Diskettes (Box of 10)	37.00*
PC Network Mac Diskettes (Box of 10)	CALL
SRW Champagne Disk Box	2.70*
SRW Blue Disk Box	2.70*

*Members pay these wholesale prices plus 8%. All prices represent a 3% cash discount. Minimum shipping \$2.50 per order.

For as little as \$8 per year you can join the thousands of value wise buyers who have saved more than \$18,000,000 on 45,000 orders in just the last six months and received these 15 unique benefits:

- Cost + 8% Pricing
- Our 400 Page Wholesale Catalog
- In-Stock Insured Fast Home Delivery
- 10 Day Hardware Return Policy
- Membership Satisfaction Guarantee
- Experienced Consultants
- Free Technical Support
- Optional Business Rental Library
- Optional Game Software Rental Library
- Special Savings Bulletins—The Print-Out
- Discount Book Library
- Membership Referral Bonus
- Corporate Account Program
- Quantity Discounts
- Price Protection

CALL TOLL FREE 1-800-621-S-A-V-E

In Illinois call (312) 280-0002

Your Membership Validation Number: **U7C1**

You can validate your membership number and, if you wish, place your first money-saving order over the phone by using your VISA, MASTERCARD or AMERICAN EXPRESS. Our knowledgeable service consultants are on duty Mon-Fri 8 AM to 7 PM, SAT 9 AM to 5 PM CST.



PERSONAL COMPUTER NETWORK
320 West Ohio
Chicago, Illinois 60610

Call now...Join the PC NETWORK and start saving today!

PC NETWORK • MEMBERSHIP APPLICATION

YES! Please enroll me as a member in the PC NETWORK™ and rush my catalog featuring thousands of computer products, all at just 8% above DEALER WHOLESALE PRICES. I will also periodically receive "THE PRINTOUT", a special up-date on merchandise at prices BELOW even those in my wholesale catalog, and all the other exclusive, money-saving services available to Members.

7C1 ☐

I am under no obligation to buy anything. My complete satisfaction is guaranteed. Please check (☒) all boxes that apply:

- | | |
|---|---|
| Basic Membership | Special V.I.P. Membership* |
| <input type="checkbox"/> One-year membership for \$8 | <input type="checkbox"/> One-year membership for \$15 |
| <input type="checkbox"/> Two-year membership for \$15 (SAVE \$1) | <input type="checkbox"/> Two-year membership for \$25 (SAVE \$5) |
| <input type="checkbox"/> Business Software Rental Library for \$25 add'l. per year—with 14 day rentals | <input type="checkbox"/> BOTH Business and Game Software Rental Libraries for \$30 add'l per year—with 28 day rentals |
| <input type="checkbox"/> Games Software Rental Library for \$10 add'l per year | *VIP members receive advance notice on limited quantity merchandise specials |
| <input type="checkbox"/> Bill my credit card: <input type="checkbox"/> VISA <input type="checkbox"/> MasterCard <input type="checkbox"/> American Express | |

Account Number

Exp. Date mo year

☐ Check or money order enclosed for \$

Name

Address Apt. No.

City State Zip

Telephone ()

My computer(s) is: ☐ Apple II ☐ Macintosh ☐ Lisa ☐ IBM PC ☐ Other

Signature (Signature required to validate membership)

Copyright ©1984, PC NETWORK INC.

[†]RENT BEFORE YOU BUY—Members are eligible to join The NETWORK's Business and Game Software Rental Libraries and evaluate products for a full 14 (Regular) or 28 (VIP) days to see if it meets your needs. And The NETWORK's rental charges are far less than other software rental services—JUST 20% OF THE MEMBER WHOLESALE PRICE.

Open Window

An exchange of Macintosh discoveries

Edited by Daniel Farber

Open Window offers tips to help you use your Macintosh more efficiently. Submitted by readers, industry experts, and the Macworld staff, items in this department address all facets of Mac work, from innovative programming routines to capabilities of the Mac and application programs not covered in the manuals.

This month's Open Window covers a variety of items, including a Microsoft BASIC program that transforms the Mac keyboard from the standard QWERTY key assignments to the Dvorak arrangement, more techniques for resurrecting damaged disks, and several MacPaint discoveries. This month's column also includes three tips contributed by Neale McGoldrick, author of the forthcoming Addison-Wesley book *Applications for the Macintosh*.

Dvorak Keys

This Microsoft BASIC program transforms the Mac keyboard from the standard QWERTY layout to the Dvorak layout. The Dvorak layout groups the most often used characters on the home row and eliminates some of the awkward key-stroking of the QWERTY layout.

```
100 REM Dvorak (Simplified) keyboard setup (same as //c)
110 ' by Ronald H. Nicholson, Jr.
120 PRINT "Do you want your keyboard modified to Dvorak?";
130 INPUT A$ : IF A$<>"y" AND A$<>"Y" THEN STOP
140 DEF FNLPEEK(Z)=PEEK(Z+3)+256*(PEEK(Z+2)+256*(PEEK(Z+1)+256*PEEK(Z)))
150 ' following are the strings for qwerty, dvorak
170 '     dvorak shifted, and dvorak with caps lock
180 QWERTY$="asdfghzxcv~bqwerty123465=97-80]ou[ip~lj'k;\,/nm."
190 DVORAK$="aœeudi;qjk~x',.pfy123465=97]80{rg/cl~nh-ts\wzbmV"
200 DVORSH$="ADEUDI:QJK~X',.PFY!@*$$%+(&[*])RG?CL~NH-TS|WZBMV"
210 DVORCL$="ADEUDI:QJK~X',.PFY123465=97]80{RG/CL~NH-TS\WZBMV"
220 MID$(DVORSH$,13,1)=CHR$(34) : REM place dbl.quote in string
230 MID$(DVORAK$,37,1)=CHR$(13) : REM place CR in string
240 MID$(DVORSH$,37,1)=CHR$(13) : REM place CR in string
250 MID$(DVORCL$,37,1)=CHR$(13) : REM place CR in string
260 '
270 ' find "asdf" KEYC package
280 P=&H2500
290 WHILE FNLPEEK(P)<>(65536!*&H6173+&H6466)
300     P=P+2 : WEND
310 IF FNLPEEK(P+&H35)<>(65536!*&H4153+&H4446) THEN P=P+2 : GOTO 290
320 '
330 ' install dvorak @ P
340 FOR I=0 TO &H2F: POKE (P+I),ASC(MID$(DVORAK$,I+1,1)) : NEXT I
350 FOR I=0 TO &H2F: POKE (P+&H35+I),ASC(MID$(DVORSH$,I+1,1)) : NEXT I
360 FOR I=0 TO &H2F: POKE (P+&H6A+I),ASC(MID$(DVORCL$,I+1,1)) : NEXT I
370 PRINT "done"
380 PRINT "Select Key Caps from Menu for help."
385 PRINT "Reset gets you back to QWERTY"
390 END
```


The program “Dvorak Keys” modifies the Macintosh keyboard from the QWERTY layout to a Dvorak layout (see the figure “Dvorak Key Caps”). Just enter the program with Microsoft BASIC (either version 1.0 or 2.0) and run it. The Key Caps desk accessory will show the appropriate key assignments for the Dvorak layout. If you want to change your keyboard back to the QWERTY layout, reload the program and reset the keyboard following the screen prompt.

Double Lines in MacWrite

Double lines, which are often used to set off a heading or divide segments in a bulletin, can easily be created in *MacWrite*. Press the **⌘** key and the letter U to toggle on the underline option (or choose Underline from the Style menu). Next, press Shift and the hyphen/line key (to the left of the = key), and you'll see a double line move across the screen.

with the Underline option toggle on to get a single underline, and then follow with a double line for two or three more spaces. The result looks like this:

John R. Crawford
Petaluma, California

Screenwriters, playwrights, and others who want to center titles or the names of characters in the middle of a *MacWrite* document have run into difficulty. Tabs are useful, but they do not center titles.

can cut and paste the name as needed. A third approach is to attempt to set a tab for each character and advance the correct number of tabs before typing each name.

But the easiest and fastest way is to use the Change option in the Search menu as follows:

- Assign each character a number or a symbol to use in your working draft of the script. (Make sure the numbers or symbols you choose aren't used elsewhere in the script.)
- Enter each new name code on a line, and advance it to a tab mark set between the left margin and the center of the

line. (If the line length is 66 characters, set the tab mark at 20. If the names are lengthy, set the tab closer to the left margin.)

- Complete the script using the symbols for each entry.
- Determine the number of spaces needed to center each name by counting the characters in the name and the number of spaces from the tab mark where the name should be inserted.
- Use the Find and Change options, inserting the appropriate number of blank spaces (using the space bar) before adding the correct name in



With the keyboard configured in the Drorak layout, the Key Caps desk accessory automatically displays the correct key assignments.

the Change box. There are 45 spaces available in this box, so you should be able to accommodate most names or titles.

- Use the Change/Then Find or Change All option to replace the code names with correctly centered character names.

Neale McGoldrick

Morristown, New Jersey

Full-Page Paint

Working on a full page is one of the most challenging aspects of using *MacPaint*. The easiest way to expand a picture to full size is to transfer it into a *MacWrite* document. *MacWrite* automatically scales the drawing to the correct full-page proportions, whereas you have to align different parts of a drawing with *MacPaint* to create a full-page document (see the figures "MacPaint Columbus" and "MacWrite Columbus").

The following steps describe how to expand a *MacPaint* drawing with *MacWrite*.

- Copy the image from the *MacPaint* document window into the Clipboard of your startup disk.
- Open up a *MacWrite* document and paste the drawing into place.
- Enlarge the drawing to full size by dragging the image down the page. Although you will not have to cut or paste the image, you won't be able to edit the drawing.

Neale McGoldrick

Morristown, New Jersey

Expanding Paint

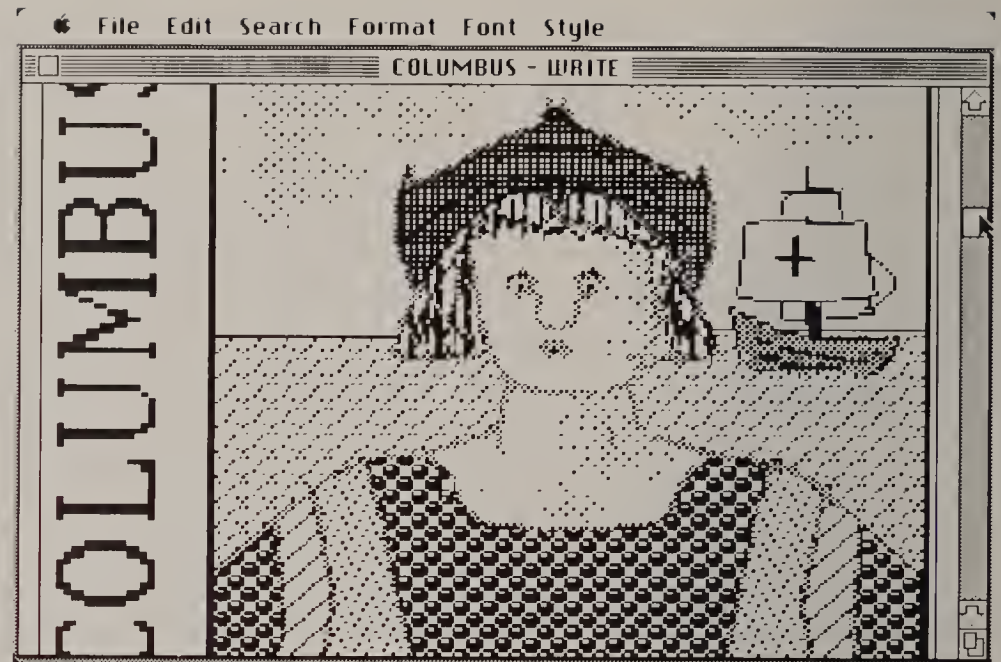
Jeffrey Young's article "Stepping into the Paint Bucket" (July/August) includes a tip on expanding a *MacPaint* drawing to full-page dimensions. I have discovered another way to expand a drawing that minimizes distortion (see the figures "Horizontal Expansion" and "Vertical Expansion").

- Divide the drawing window into three vertical sections. You can indicate the division lines by drawing short lines at the top of the screen; these can be erased later.
- Starting from the left, draw a marquee around the section on the left and move the section to about mid-screen.
- Use the Rotate option from the Edit menu to rotate the selected part of the drawing.
- Cut the selected part of the drawing to the Clipboard.
- Choose the Show Page option, position the drawing window at the bottom of the page, and click OK to return to the drawing.
- Select the entire window by double-clicking on the marquee icon, and paste in the selected part of the drawing from the Clipboard. The drawing section is thus expanded to the full dimension of the window area (a third of a full page).

- Follow the same procedure for the other two sections of the drawing.

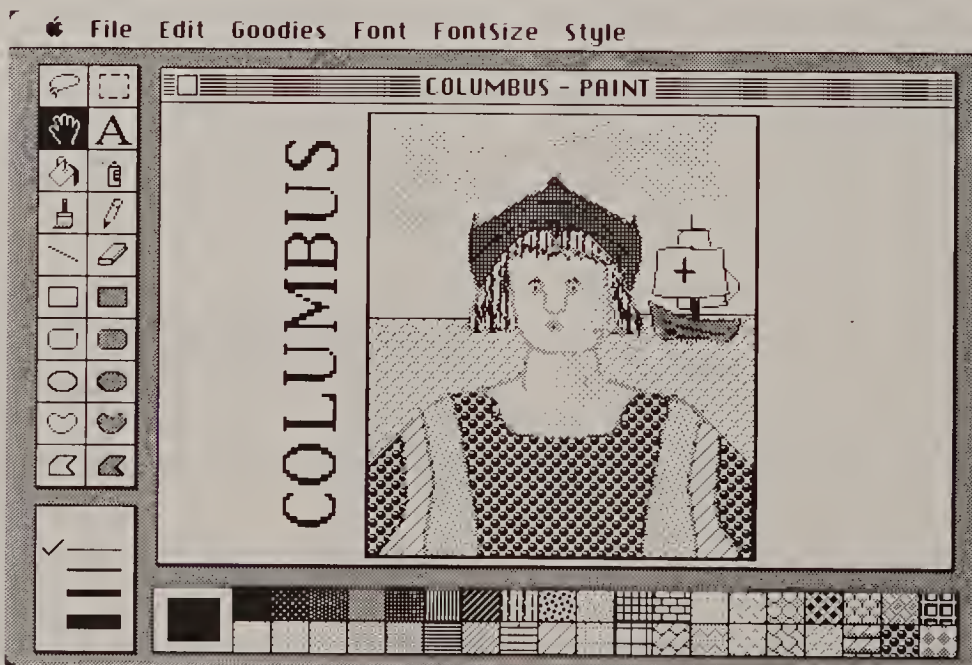
Bill Andel

Philadelphia, Pennsylvania



MacWrite Columbus

To expand the drawing to full-page dimensions in MacWrite, drag the selection rectangle (marquee) to the end of the page. The drawing is scaled automatically to the correct proportions.



MacPaint Columbus

Expanding a drawing to full-page size in MacPaint requires several steps of cutting and pasting portions of the drawing. An easier way is to expand a drawing to full-page size in MacWrite. First, copy the drawing into the Clipboard, and then paste it at the top of a MacWrite document.

Custom Patterns

One of *MacPaint*'s unique features is that you can create your own patterns. Any new pattern you create is added to the pattern palette and saved automatically with the drawing, replacing one of the standard patterns. You may want to reproduce a pattern you created in a document. The following two techniques describe how to save a pattern for future use.

- Copy a section of the desired pattern onto the Clipboard and paste it into a new document. Then double-click on a pattern from the pattern palette. This procedure displays the selected pattern in the Edit Pattern window.
- Click on the pattern you pasted into the document to make the pattern appear in the Edit Pattern window. Save the new pattern by clicking



Horizontal Expansion

Enlarging a MacPaint drawing by dividing it into three horizontal sections and expanding each section gives you an elongated version of the drawing.

OK. It automatically becomes part of the document's pattern palette.

- Take a snapshot of the screen (⌘-Shift-4 to print the screen immediately, or ⌘-Shift-3 to create a *MacPaint* document of the current screen) with the desired pattern showing in the Edit Pattern window. This procedure preserves both the pattern and the dot-by-dot image in FatBits so that you can recreate the pattern

by copying the pattern in the 8- by 8-dot editing window. Keeping records of custom patterns on paper is probably the handiest way to preserve them (see the figure "Custom Pattern").

*Neale McGoldrick
Morristown, New Jersey*

Cut-Sheet Printing

I have discovered a problem not covered in the documentation for the Imagewriter printer. When you use the Cut



Vertical Expansion

By dividing a drawing into three vertical sections and then rotating and enlarging each section, you keep the proportions of your original drawing relatively intact.

Sheet printing mode and hand-loaded paper, you have to start the sheet as close to the top as possible to prevent overflow of the print off the bottom of the page onto the platen. For some reason, the Imagewriter ignores the Paper Error signal and continues to print until the document is completed, even though there may be no paper under the type head. The type head could be damaged by printing a significant portion of the document directly on the platen.

One way to solve this problem is to use a cut-sheet feeder. If you don't have one, you can select the Continuous printing mode even when you use cut sheets. The Imagewriter will

stop printing shortly after the Paper Error light comes on, and then you can use the Select button to control the printing of the last few lines.

*D. Scott Nord
Philadelphia, Pennsylvania*

Secret Character

In my ongoing quest to discover the hidden treasures of the Mac, I spend a great deal of time playing with different key combinations, fonts, and font sizes in search of secret characters. Perhaps I'm trying to put

Disc the Season



3 1/2" Memorex Micro Disc \$3.49 ea.

Comark, Inc. is one of the largest distributors of Macintosh supplies in the U.S.

Minimum order 10 diskettes. Shipping \$3.00 per 100 diskettes. Sales tax added for Ill. customers. Visa, Mastercard, C.O.D. orders accepted.

COMARK, INC. 1-800-323-6135

135 N. Brandon Drive, Glendale Heights, IL 60139
In Illinois, phone collect (312) 351-9700

Circle 154 on reader service card

Moving?

Be sure your Macworld subscription goes with you!

Use the coupon here for your convenience to change the mailing address on your Macworld subscription.

Be sure to include the mailing label from a recent issue if possible or, if a label is not available, please send us your complete former address including the zip code. Allow 6-8 weeks for this change to be effective.

SAVE TIME. Call our toll-free service number for immediate service:
800-247-5470 (In Iowa 800-532-1272).

New address:

Name _____

Company _____

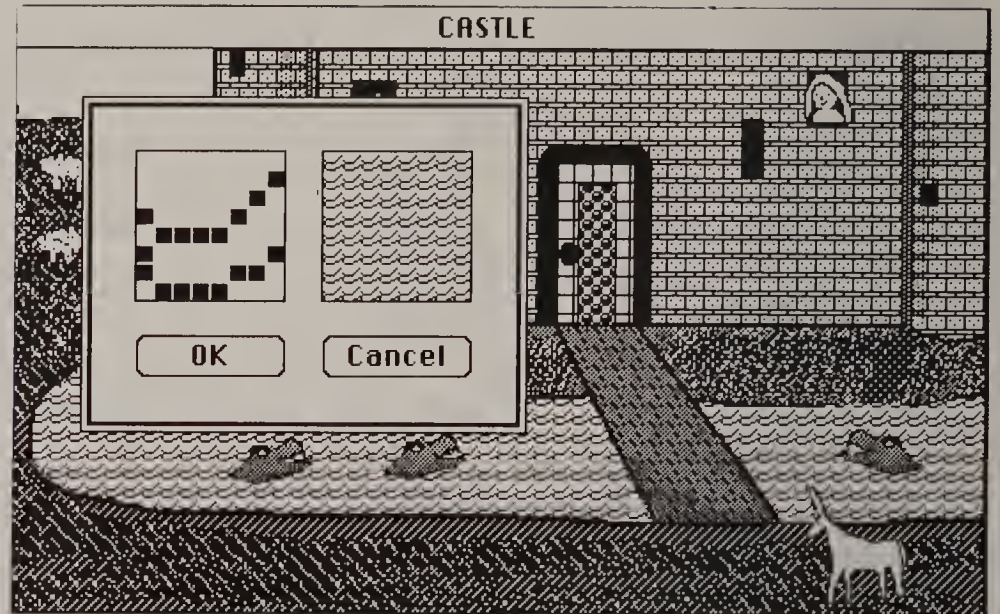
Address _____

City, State, Zip _____

Former address:

Attach
mailing
label
here ►

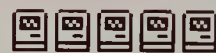
Send coupon and mailing label to Macworld Subscription Dept., P.O. Box 20400,
Bergenfield, NJ 07621.



Custom Pattern

You can maintain records of custom patterns by taking snapshots of the dot patterns in the Edit Pattern window. When you want to use a particular pattern, you fill in the dots as in the printed version.

off writing my term paper on Spinoza. Whatever the case, I found that typing Shift-Option-⌘ in 10-point Geneva reveals the following icon:



Leah Raskin
Miami, Florida

Model 100 Compatibility

The computing world has blessed us with an unexpected gift. If you own a Radio Shack Model 100 lap computer, you'll be delighted to know that it's 100-percent compatible with your Macintosh. You don't have to buy anything additional—not even a cable.

Use your Model 100 to create any text file using the built-in word processor. When you're ready to move the file to the Mac, just switch the Image-writer cable from the printer

port to the phone port on the back of the Mac. The printer end of the cable fits perfectly into the RS-232 port on the Model 100. (Don't worry about pin assignments or any other technical stuff—the pins are already set correctly.)

Now load a communications program on the Mac—either *MacTerminal* or one of the public-domain programs such as *MacTep*. Run the *Telcom* program on the Model 100. Make sure that both computers are set for the same baud rate, data bits, stop bits, and parity scheme, and enable XON/XOFF. Now send your Model 100 file to the Mac, capturing the transmitted information on the Mac as a file.

Finally, exit your Macintosh communications program and call up *MacWrite*. You'll find that your text file is perfectly formatted into lines and paragraphs, and you can add text enhancements in *MacWrite*. Then choose Save As from the File menu and save the file as a complete document. (One minor wrinkle: you may receive the alert message "Can't save this file." Just click OK and give the Save As command again. It will work on the second try.)

When was the last time you were able to swap files between two completely different computer systems with absolutely no hassle? Since the Model 100 has recently been discounted, it's a very attractive accessory for the Mac traveler who wants to be able to write at 30,000 feet.

Andrew Fluegelman
Editor-in-Chief, Macworld

Faster Two-Disk Ejection

Before I bought a Mac, I was spending my spare time fine-tuning my vintage Jaguar. Now that I have a Mac, I spend most of my leisure time fine-tuning the Mac. I've discovered a simple way to eject the disks from the internal and external drives with a minimum of fuss.

Many people are aware that you can press **⌘-Shift-1** followed by **⌘-Shift-2** to eject the two disks quickly. A faster way is to select both disk icons with the selection rectangle and press **⌘-E**. Another way to eject both disks is to choose Select All (**⌘-A**) from the Edit menu, followed by Eject (**⌘-E**). If you frequently juggle disks in and out of the drives, you'll appreciate the time savings.

Robert Hender
Ocean Beach, California

Resurrecting Disks Update

Several solutions have been offered for resurrecting disks that the Mac cannot read (see *Get Info*, July/August). One way is to press the small button on the lower-right side of the drive slot. At best, this solution is inelegant; at worst, it can damage the disk drive. A better solution is to start up a work disk and open the Disk Copy utility. When the Mac asks for the disk you want to copy, feed it an initialized blank disk. When it asks for the destination disk, give it the locked disk. The Mac will then tell you that there is data on the disk and will ask if it can initialize it.

Arthur A. Chaykin
Dekalb, Illinois

Perhaps you've come up with a nifty routine, gained some insight into how the Mac or an application program works, or even written a short program that performs a useful function or creates an interesting diversion. Tell us about it, and we'll pass your discovery along. We'll also pay \$25 to \$100 for each Open Window item published. Please send your Macintosh discoveries on a disk (which we will return) to Open Window, 555 De Haro St., San Francisco, CA 94107, or electronically to CompuServe 74055,412 or The Source STE908. All submissions become the property of Macworld. □

Thinking games for the Macintosh™

MacFlip™

MacFlip is a challenging game played in a manner similar to Othello* and Reversi. Strategy is the key to out-maneuvering "Mac" or a human opponent to flip the discs and win. Options include level of play and hints for your next move.

MacTrivia™

Test your knowledge of trivia against an opponent as you fight the clock. Play alternates between two players or teams as you answer multiple-choice questions during two nine-minute halves. Bonus questions are awarded. MacTrivia contains over 2000 questions from all categories.

Special Introductory Prices
To order, call toll free
1-800-521-7900
(order desk only)

Game	#	Price	Total
1. MacFlip		\$20.00	\$
2. MacTrivia		\$30.00	\$
3. Both 1 & 2		\$40.00	\$
		Subtotal	\$
		TX Res add5%	\$
		Shipping	\$ 2.00
		TOTAL	\$

Enclosed is:

☐ Check ☐ Money Order

Charge to: ☐ Master Card ☐ VISA

Card No. _____

Expiration Date _____

Signature _____

Print Name _____

Address _____

City _____ State _____ Zip _____

Phone (____) _____

McCarron-Dial Systems
P.O. Box 45628
Dallas, Texas 75245
(214) 247-5945

MacIntosh is a trademark of Apple Computer, Inc.
*Othello is a registered trademark of CBS Inc.

Circle 47 on reader service card

BACKGAMMON — the oldest game known to man — exciting strategy game requiring positional artistry and dazzling boldness. The combination of skill and luck makes it “the cruelest game” — a single roll can destroy the best laid plans. And now, an expert opponent challenges you...

MacGAMMON!

- MACINTOSH IS AN EXPERT OPPONENT USING HUMAN-LIKE STRATEGIES
- OFFENSIVE AND DEFENSIVE USE OF THE DOUBLING CUBE
- TOURNAMENT SCORING
- GAME STATISTICS AND PROBABILITIES
- SOUND EFFECTS
- FULL USE OF THE MACINTOSH USER INTERFACE

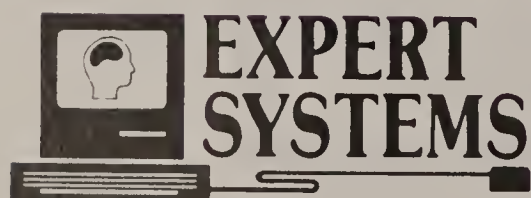


**MASTERCARD,
VISA,
CHECKS &
MONEY
ORDERS
ACCEPTED**

\$50

ORDER NOW!

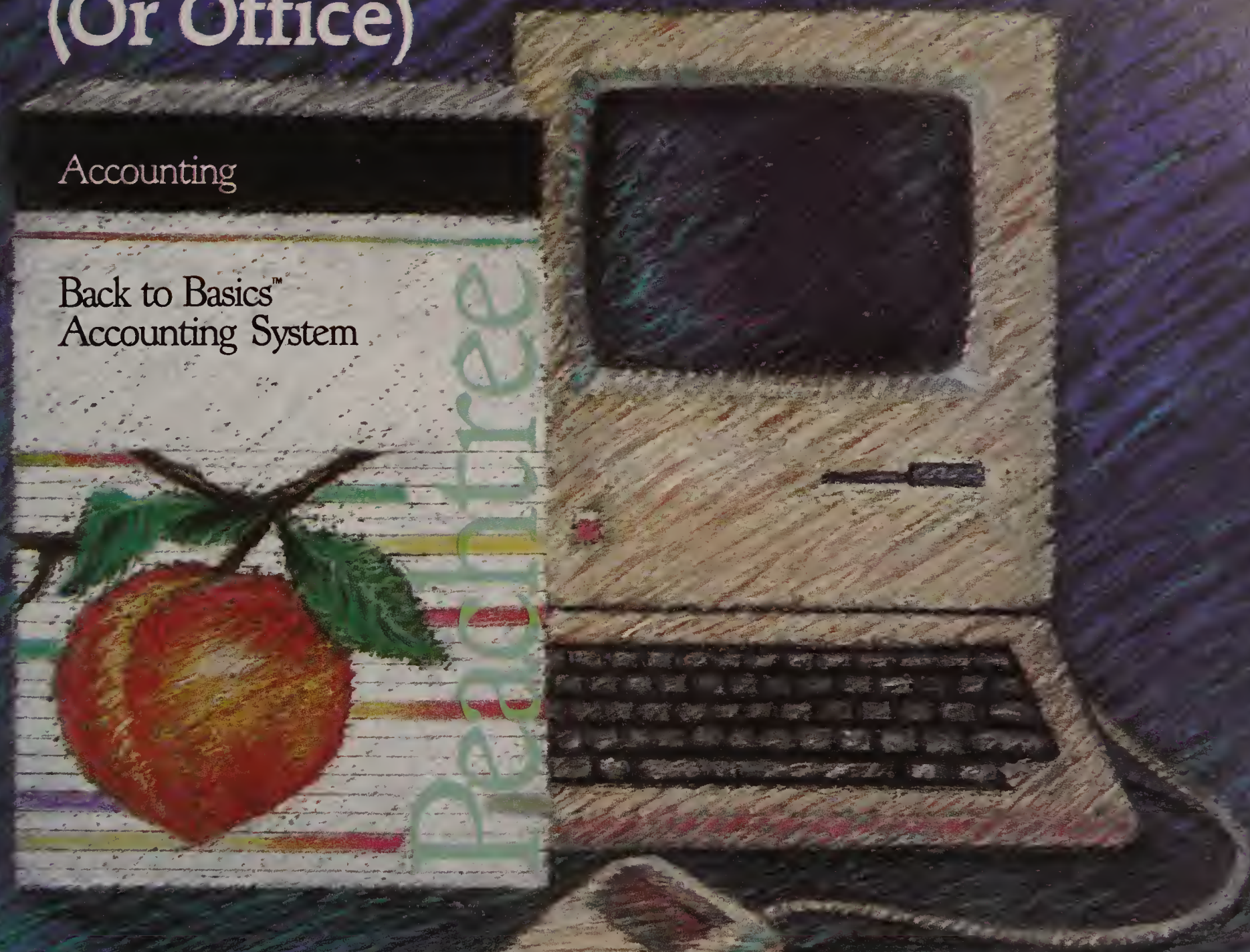
**DEALER
INQUIRIES
INVITED**



EXPERT SYSTEMS, LTD. • P.O. BOX 2352, 594 ORANGE GROVE AVE., MELBOURNE, FL 32901 • (305) 725-5614

Circle 60 on reader service card

Introducing Accounting For Those With A Mouse In The House. (Or Office)



Back to Basics Accounting System by Peachtree Software® is now available for the Macintosh.™

It's named Back to Basics because it is an uncomplicated, easy-to-learn accounting system for small businesses.

You don't need any accounting experience and barely need any computing experience. The straightforward manual teaches both accounting and computing at the same time.

But make no mistake. This is a full-featured series of interactive products including General Ledger, Accounts Payable and Accounts Receivable.

The first business accounting system for the Macintosh, Back to Basics has been enjoyed by owners of Apple® II+,

IIe and IIc all along. In fact, you've probably seen it featured in Apple Macintosh advertisements.

Uncomplicated—easy-to-learn—yet full featured. That's Back to Basics.

For more information, contact your local dealer or Peachtree Software, 1-800-554-8900.

**America's Software
grows on the Peachtree.**

Peachtree Software



Apple is a registered trademark licensed to Apple Computer, Inc. Macintosh is a trademark licensed to Apple Computer, Inc. Peachtree and Peachtree Software are registered trademarks of Peachtree Software Incorporated, an MSA Company.

Circle 124 on reader service card

WE'VE TAKEN LAS VEGAS



And put it in a great new game for the Macintosh Computer!

One pull of the handle and you know this is the real thing.

MAC-SLOTS puts all the thrills and challenges of playing Las Vegas at your fingertips with two terrific games on one diskette.

Slot Machine with its spinning bells and fruit, its jackpots... and surprises.

Keno. The ultimate frenzied, flashing numbers game.

This isn't "just like the original," it's better! So, put your money where your mouse is.

See your Macintosh dealer for a demonstration. Or order direct. Call toll-free 1-800-235-6646, Ext. 561.

In California: Call toll-free 1-800-235-6647, Ext. 561.

MAC-SLOTS-\$77.77 plus tax & \$2 shipping. Mastercard and VISA.

Soft-Life Corporation, P.O. Box 647, Paramount, CA 90723. (213) 774-3054.

Macintosh and the Apple Logo are registered trademarks of Apple Computer, Inc.

Circle 22 on reader service card



MacFAST

MacFEATURES . . .

MacFORTH

LEVEL 1 MacFORTH

- Stand Alone Programming On Macintosh
- User Defined MENUS
- User Defined WINDOWS
- Compatible With Macintosh User Interface
- Mac File Compatibility
- Interactive COMPILER & INTERPRETER
- User Access To TOOLBOX
- 32-bit FORTH System
- Large Installed Base With Local User Groups
- Priced At . . . \$149.00!!!

LEVEL 2 MacFORTH

Includes All Level 1 Features Plus:

- Assembler
- IEEE Floating Point
- Advanced Graphics
- TE Edit Support
- Controls Support

Now Available

\$249.00


Contact Your Local Apple Dealer:

OR:



CREATIVE SOLUTIONS

4701 Randolph Road Suite 12
Rockville, Maryland 20852
(301) 984-0262



Introducing MACWORLD

The Macintosh Magazine


**The Exciting New Magazine for
the World's Most Creative Personal
Computer—the *Macintosh***

**At Special Charter Subscriber Rates
Save Up to 54% Off the Newsstand Price***
(*when you subscribe for 3 years)

Personal computing took a giant leap into the future when Apple introduced the Macintosh. We've created *Macworld* as your passport into this incredible new realm of computing. Each issue we'll bring you everything you need to explore and get the most out of your Macintosh. From the latest product news to innovative business applications, from amazing graphics to personal productivity tools and games, each issue of *Macworld* will be packed with interesting, practical, readable information written by skilled, perceptive writers.


Each month we'll be creating a *Macworld* community; sharing ideas, problems, and creative solutions while we explore the world of Macintosh together.

So why take a chance on missing a single exciting issue? For a limited time only you can subscribe to *Macworld* at special Charter Subscriber rates of only

 **\$24 for 1 year (12 issues)**

That's a savings of 20% off the regular \$30 subscription rate and 50% off the newsstand price!

**And you can save even more by subscribing
for 2 or 3 years at Special Charter Rates. Don't
Wait...Subscribe Today and Save!**



Special Charter Subscription Offer

Save 50% off
the Newsstand Price!

~~\$48~~

Newsstand

~~\$30~~

Regular Subscription Rate

\$24

Special Charter
Offer

Order Now to Take
Advantage of This
Limited Time Offer!
VISA and MasterCard
Accepted! Call TOLL FREE:
800-247-5470
(in Iowa 800-532-1272)

Macworld was published in
May, July, and September 1984
and began monthly
publication in November 1984.

YES! Please send me *Macworld*, the Macintosh magazine.

☐ Please Bill Me ☐ Payment Enclosed

Please Send Me: ☐ 12 issues/\$24 ☐ 24 issues/\$46 ☐ 36 issues/\$66

Name _____

Company _____

Address _____

City, State, Zip _____

Please allow 6 to 8 weeks for delivery of your first issue. Outside the U.S. subscriptions must be prepaid in U.S. funds. Outside the U.S. and Canada, rates are \$36/year for surface mail and \$84/year for airmail. Offer expires September 30, 1985. JM2067

YES! Please send me *Macworld*, the Macintosh magazine.

☐ Please Bill Me ☐ Payment Enclosed

Please Send Me: ☐ 12 issues/\$24 ☐ 24 issues/\$46 ☐ 36 issues/\$66

Name _____

Company _____

Address _____

City, State, Zip _____

Please allow 6 to 8 weeks for delivery of your first issue. Outside the U.S. subscriptions must be prepaid in U.S. funds. Outside the U.S. and Canada, rates are \$36/year for surface mail and \$84/year for airmail. Offer expires September 30, 1985. JM2067

YES! Please send me *Macworld*, the Macintosh magazine.

☐ Please Bill Me ☐ Payment Enclosed

Please Send Me: ☐ 12 issues/\$24 ☐ 24 issues/\$46 ☐ 36 issues/\$66

Name _____

Company _____

Address _____

City, State, Zip _____

Please allow 6 to 8 weeks for delivery of your first issue. Outside the U.S. subscriptions must be prepaid in U.S. funds. Outside the U.S. and Canada, rates are \$36/year for surface mail and \$84/year for airmail. Offer expires September 30, 1985. JM2067



NO POSTAGE
NECESSARY
IF MAILED IN
UNITED STATES

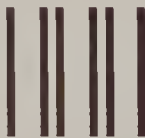


BUSINESS REPLY CARD

FIRST CLASS PERMIT NO. 79 BERGENFIELD, NJ

POSTAGE WILL BE PAID BY ADDRESSEE

Macworld
Subscription Department
P.O. Box 20300
Bergenfield, New Jersey 07621



NO POSTAGE
NECESSARY
IF MAILED IN
UNITED STATES

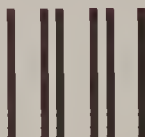


BUSINESS REPLY CARD

FIRST CLASS PERMIT NO. 79 BERGENFIELD, NJ

POSTAGE WILL BE PAID BY ADDRESSEE

Macworld
Subscription Department
P.O. Box 20300
Bergenfield, New Jersey 07621



NO POSTAGE
NECESSARY
IF MAILED IN
UNITED STATES



BUSINESS REPLY CARD

FIRST CLASS PERMIT NO. 79 BERGENFIELD, NJ

POSTAGE WILL BE PAID BY ADDRESSEE

Macworld
Subscription Department
P.O. Box 20300
Bergenfield, New Jersey 07621



The Prodigy Comes Of Age!



ExperTelligence™
559 San Ysidro Rd.
Santa Barbara, CA 93108
(805) 969-7874

Macintosh is a trademark licensed to Apple Computer, Inc.

ExperLogo *for the Macintosh™* is a powerful, many faceted version of the Logo computer language originally introduced in the late 1960's. ExperLogo excels as the patient tutor for those being introduced to computers for the first time, while at the same time it serves as a powerful development tool for the skilled programmer. Taking full advantage of the simplified user-interface characteristics of the Macintosh, Experlogo is easier to use than any previous Logo.

ExperLogo's innovative features include:

- ▶ 2-D, 3-D and Spherical Graphics
- ▶ Compiled Speed
- ▶ Powerful Data File Input/Output Capability
- ▶ Ability to Process Data Using Arrays
- ▶ Expanded Set of List Processing Primitives
- ▶ Friendly Mac-like User Interface
- ▶ Easy Access to the Macintosh Toolbox

The speed, combined with other advanced features that eliminate memory constraints and provide for sophisticated data file manipulation, are some of the reasons ExperLogo is now ready to assume the additional role as a serious program development language.

ExperLogo embodies power and versatility while retaining Logo's original virtues of being easy and fun to use. Have an ExperLogo experience. Ask you local Apple dealer for a demonstration today.

Circle 56 on reader service card



What Do You Do With Your Macintosh™ After Hours?

Now that Macintosh™ has your desk in shape...let it get **you** in shape!

...with the MacMuscle™ software program that teaches and **shows** you how to best exercise your body. Simply view the anatomical display of the human body and select which muscles you wish to cultivate. The MacMuscle™ program will then tell you **which** exercises to do. You select which exercise you want to perform and our animated figure will demonstrate how to do it!

The MacMuscle™ program will also automatically generate a workout schedule just for you and provide an audio demonstration of the training pulse rate ideal for you.

MacMuscle™. It's a Tech 2000™ idea.

Available from your dealer or clip the coupon or call (714) 650-7240

Dealer inquiries invited



MacMuscle™ —
Tech 2000 Software, Inc.
Macintosh™ —
Apple Computer, Inc.

Tech 2000 Software, Inc.

263 Lugonia Street

Newport Beach, California 92663

Send ☐ MacMuscles™ at \$89.95 plus \$2.50 shipping each.
I enclose check or Visa/Mastercard number. Allow 2-4 weeks for delivery.

California residents add 6% sales tax.

Name _____

Address _____

City _____

State _____


Zip _____

Check ☐ one ☐ Visa ☐ Mastercard Signature (required) _____

Expiration date _____ / /

Circle 104 on reader service card





Into the Mouth of the M.A.U.G.

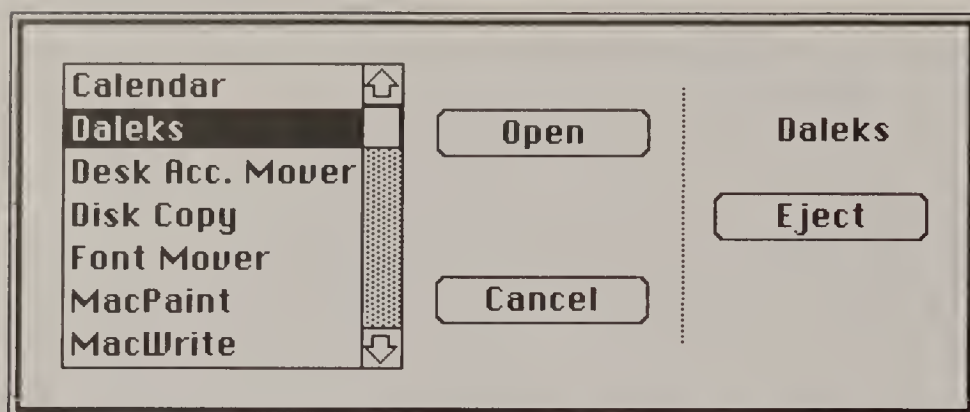
Jeffrey Young

It's pitch-dark outside and I'm hunched over my keyboard staring at my Macintosh. On the screen, lines of strange-looking text are moving slowly up and out of sight. I must have looked at the same menu two dozen times, trying to comprehend the rows of S's, R's, X's, and I's that are supposed to help me find my way into this electronic cavern. I repeatedly tap the Return key and watch the inch-high blocks of text flutter by and disappear off the top of the screen. Funny, but they look more and more like cavern bats now that exhaustion is setting in.

I've been on the CompuServe information service for more than an hour and I'm just as bewildered as I was when I turned on my Mac. The friendly guy who got me started told me that I could find the Micronet Apple user group by typing the cryptic command "Go PCS 51" at the "prompt"—whatever that was.

As I sit here before the mouth of the cave, frustrated because I can't find the magic words that slide open the slab of information service granite sealing the entrance, I remember to try that strange phrase "Go PCS 51." It proves to be my "Open Sesame"; my Macintosh screen immediately springs into action. The phrase "Request Recorded" is the first thing I see. Then, after a short wait, the fabled words "Welcome to M.A.U.G." appear on the screen.

I've done it. I have successfully entered the caverns of the electronic information sultan, CompuServe. The Micronet Apple user group, otherwise known as the M.A.U.G., might be Ali Baba's cave as far as I am concerned. And the treasures strewn in front of me look every bit as fabulous as those in the Arabian Nights.



Applications Mini-Finder

Free software for the Mac is available in the Reference Library. Although you can't run the programs or view their graphics while on CompuServe, you can download them for execution on your Mac. One program available on the M.A.U.G. is the Applications Mini-Finder, which shows the applications residing on disk. Ordinarily, the Mini-Finder shows only documents tied to the current application, without showing the application itself.

I began my journey into the heart of the M.A.U.G. after overhearing snippets of conversation at user group meetings. I heard that Mac enthusiasts across the country were fending off computer isolation by forging new friendships on electronic bulletin boards. People said electronic bulletin boards provided a place to exchange the latest computing gossip and keep tabs on the continually revised release date of languages and programs you had your eye on.

I found that there comes a time, after you've shown your new equipment to your friends, family, and neighbors, when you want to reach out and share your discoveries and frustrations with other Mac owners. And if you've heard about popular information services such as The Source and CompuServe, you find yourself staring longingly at modems, holding the *MacTerminal* program in your hands, and thinking seriously about signing up for one of them.

The Source and CompuServe are communications networks that provide a central location for exchanging electronic mail, bulletin board messages, and software. They also have facilities for special-interest groups, such as CompuServe's Apple user group. And both information services provide a number of additional services to Mac owners. You can read the latest reports on news, weather, and sports from major wire services and publications. Various business services are available, including electronic banking; financial analysis and planning programs; and reports on stocks, bonds, money markets, and mutual funds. You can also enjoy other diverse benefits, which range from making travel arrangements to reading gardening tips and book, movie, and restaurant reviews.

Starting Your Journey

Before you take the communications plunge you should know what you're getting into. Although you can glean a great deal of information from either The Source or CompuServe, you have to pay for it. When you sign up for CompuServe, you pay either \$19.95 or \$39.95. For the \$19.95 price you receive one hour of use, and for \$39.95 you receive five hours. The charge for each following hour during prime time (8 a.m. to 5 p.m. Monday through Friday) is \$12.50 per hour for a 300-baud modem and \$15 per hour for a 1200-baud modem. During nonprime time (5 p.m. to 8 a.m. Monday through Friday and all day on weekends and holidays) the charge is \$6 per hour for a 300-baud modem and \$12.50 per hour for a 1200-baud modem.

● ● ● ● ● *There comes a time when you want to reach out and share your discoveries and frustrations with other Mac owners.*

The registration fee for The Source is \$49.95 plus a minimum monthly charge of \$10 worth of time whether or not the time is actually used. During prime time (7 a.m. to 6 p.m. Monday through Friday) the charge is \$20.75 per hour for a 300-baud modem and \$25.75 per hour for a 1200-baud modem. During nonprime time (6 p.m. to 7 a.m. Monday through Friday and all day on weekends and holidays) the charge is \$7.75 per hour for a 300-baud modem and \$10.75 per hour for a 1200-baud modem.

Every minute you're connected to the service (or "on-line" as initiates say) is like being in a taxi—the meter runs continually until you finally type "Off" and leave the system. This situation is no problem if you're familiar with the territory. Within minutes of "logging on" you can reach the area you want, extract the necessary information, and be gone, or "log off." But as a beginner you may feel like you're stuck in rush-hour traffic on the Long Island Expressway in a cab whose meter is running suspiciously fast. You can easily spend two to three hours and 50 bucks on top of your registration fee before you even begin to understand what services are offered and how to use them.

You can't tally the price you pay for on-line information in dollars and cents only, either. If you've grown accustomed to the Mac's icons, windows, pull-down menus, and mouse, hold on to your seat. Information services are designed for old-fashioned com-

puters. Operations such as logging on, scanning information, and sending and receiving messages must be carried out with keyboard commands that often bear little linguistic relation to their purpose. If you aren't converted already, one hour on either The Source or CompuServe will make you a true believer in the Macintosh user interface.

But don't get discouraged; there is a way to reduce the cost and confusion of initiation. When you first log on to the service, record the menus as quickly as you can and save them on disk. Then log off and print out the information. The printed menus can serve as a map of the information service. Study your printed menus until you feel comfortable with them; then return to the system. Now you can navigate by landmarks instead of exhausting your money and patience while you aimlessly wander around.

Welcome to the M.A.U.G.

Because I was looking for a community of Apple users, such as the M.A.U.G., I decided to explore CompuServe. Once you subscribe to CompuServe, you can become a member of the M.A.U.G. at no extra charge. You can then take advantage of the three sections of the M.A.U.G.—the message system, the reference library, and the conference area.

The M.A.U.G. makes some attempt to help beginners when they first enter the group. A welcome message left by the system operator (or "Sysop") explains the three sections of the M.A.U.G. You can enter the message system to read and leave messages and survey other members' messages for practical ideas and hints. The reference library is a group of data bases where you find bulletins, instructions for the bulletin boards, and Macintosh programs that you can download to your own computer. And the conference area is a set of channels designed for informal and structured on-line conversations. The welcome message also gives a few commands that help you get more information about the sections.

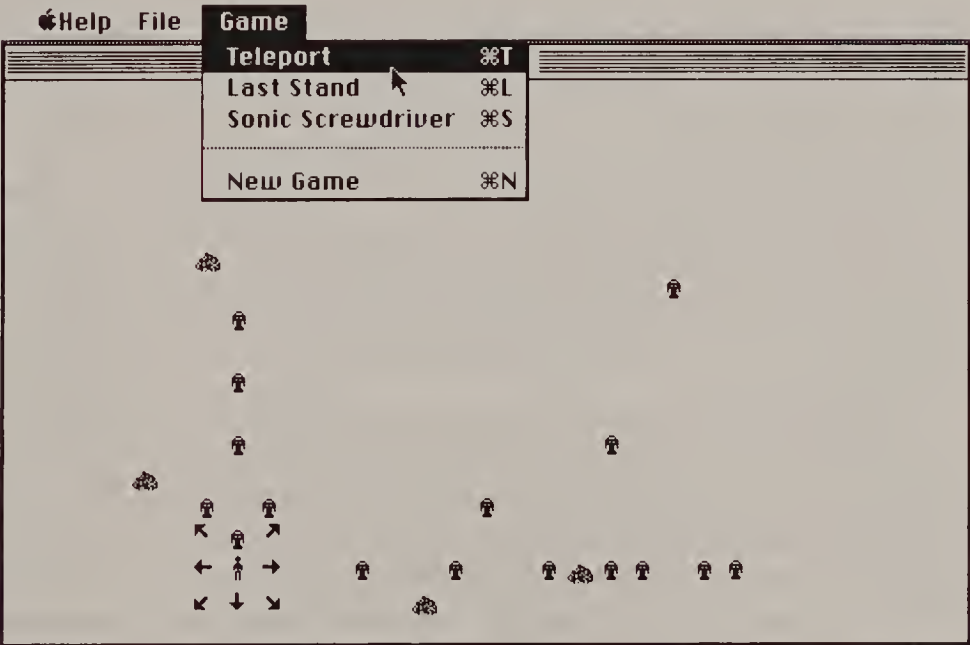
Once you stumble into the M.A.U.G., you encounter its version of the Rosetta Stone—the Function menu. The Function menu contains cryptic commands such as "L" for "Leave a message," "B" for "Read bulletins," and "RT" for "Read thread." Beyond the Function menu are other menus holding more baffling commands. Eventually, you can figure out what the commands mean—you just spend enough hours on the system to try them all. To a large extent, you must learn this strange language by yourself.

The Valley of Messages

The first time you enter the M.A.U.G. and see the messages queuing up one after the other, you'll know how explorers must feel when they discover a long-sought treasure. You may have been isolated before, but suddenly you're a member of a community, a community with answers to almost every question about the Macintosh you have ever had or will ever have. The system provides access to an enormous body of constantly changing information about products for the Mac and other Apple computers and solutions to programming and other computing problems. And all the messages are public; they can be read by you and everyone else with access to the bulletin board.

In addition to the fundamental commands offered in the Function menu, a number of advanced methods are available for investigating the information contained in the messages. You can perform keyword searches, follow chains of messages relating to specific topics, and scan messages by the number of days they've been left on the system.

Using the message system itself may sound difficult. And it is, at least until you've used the system a few times and conquered your fears. But even after you learn how to access information, many of the mes-



Daleks

Another program in the Reference Library is the action strategy game Daleks. In this game, you attempt to survive by avoiding steadily converging robots. If you are overrun by the robots, or move into their immediate zone of control, you are disintegrated. By guiding the robots with your actions, you can get them to destroy themselves as they collide with each other. You can escape by teleporting out of range, or you can destroy adjacent robots once each round with a sonic screwdriver.

sages sound like some weird Cajun dialect. Most of the words are recognizable as English, but their meaning escapes you. For instance, try to follow this message:

"My Mac went nuts, too, but I thought this was normal due to the nature of the type of file. So I downloaded a couple of times with RLMTEP using OPT-R, which read 800 blocks of the *Life* file before giving me an error message. Then I used *Red Ryder* and downloaded via Xmodem. Then RRDTD read 3 blocks and bombed. I suspect the problem is in the nature of the file vs. the CIS upload."

If you bomb like the program mentioned above when you attempt to understand this message, you're excused. "RLMTEP" refers to a public-domain modem program available on the CompuServe reference library. *Life* is a game that was converted for the Mac by Bill Atkinson (creator of *MacPaint*) and provided free by him through many user groups and bulletin boards. *Red Ryder* is another public-domain communications program, and "Xmodem" refers to a file transfer protocol that many computers use. "RRDTD" is programmer shorthand for a *Red Ryder* conversion program, and "CIS upload" refers to the original transfer of *Life* into the CompuServe library. Everything clear now?

While some M.A.U.G. conversations will streak over your head like so many bats, you'll discover that you can ask for and receive intelligible help. The most encouraging thing about the replies is their tone, which is always cordial, usually practical and helpful. Often, within minutes of a plea for help someone will take the time (and pay the price) to share information with you. There are also many informative messages about products and techniques. If you've been trying to master new software or even to write your own programs, exchanging ideas with other Mac owners can help you overcome any roadblocks you encounter along the way.

"When I bought my Macintosh several months ago there was absolutely no [communications] software available," explains Brad Vautrinot, a Boston Mac owner who finds the M.A.U.G. invaluable. "And when I began to come onto the bulletin board I had no idea what I was doing. I had a Franklin computer before so I was familiar with the M.A.U.G., but I had no idea how to download or transform files into something I could use.

"For instance, I was using an early version of BIN-HEX [a binary-to-hexadecimal transformation program that allows *MacPaint* images to be converted into a form that the information service computer can store] to transform programs. I kept getting a few lines of garbage at the beginning of every file . . . garbage that made the programs go crazy when I tried to run them.

"So I put a message on the board asking for help and within half an hour somebody told me to try another program called TRIM.BAS to remove the extra garbage lines my system was reading into the program. Once I did that the programs worked like a dream."

Most CompuServe and M.A.U.G. devotees, like Brad Vautrinot, seem to be programming-oriented, or at least fairly advanced. The composition of the group may reflect the fact that early Mac owners had to have previous telecommunications experience (and for that

● ● ● ● ● *Often, within minutes of a plea for help someone will take the time to share information with you.*

matter, access to another computer) to use CompuServe. But one of the underlying rules of bulletin boards is that any group can influence the direction of the messages. If a large number of beginners joins up, they will turn the focus of the board to their interests. So don't despair if you find at first that few messages reflect your enthusiasms.

The Underground Library

The Reference Library was probably the most valuable section of the M.A.U.G. during the first six months after the release of the Macintosh. Members of CompuServe have access to "freeware"—public-domain software written by other members. One free program, *MacTep*, helped Mac owners use their machines to send and receive information several months before commercial communications software such as *MacTerminal* became available.

The Reference Library is divided into nine sections, which are numbered from XA0 to XA8. The XA4 section offers software for the Macintosh and the Lisa, including application programs, games, and graphics. These programs have all been uploaded by various CompuServe members and can be downloaded by any subscriber for the cost of the time used and a disk to store the programs on.



Calendar

Once you download this calendar program from the M.A.U.G., you can install it as a new desk accessory. The Calendar tells you the date and lets you make notes for appointments or other reminders by clicking on any day shown in the Calendar. After the day appears, you simply type your notes in the lower portion of the window.

A variety of software is available on the M.A.U.G. A program like *MacTep* is very useful, and enables you to communicate using your Mac without buying the more expensive Apple program. Other software, such as games, music programs, desk accessories, and programs that fix bugs in other software, will undoubtedly make you look forward to periodic searches of the library. But don't expect to find alternatives to commercial-quality application programs.

Two additional sections of the library, XA5 and XA0, might interest you. In XA5, members record their impressions of Mac and Lisa hardware. This information can help you to make purchases and solve hardware problems. Recent files, for example, include comparisons of hard disks as well as pin diagrams for different types of cables and connections. And in the XA0 library a number of help files are located; these explain different aspects of the operation of the M.A.U.G. This library is a good place to find help if you've lost your way for the umpteenth time.

The Chamber of Voices

You may not have realized it, but in addition to everything else your Mac can double as a CB radio. The M.A.U.G. has a weekly on-line conference, when Mac and Lisa owners can converse by typing on their

keyboards and reading the responses from other participants on screen. This is also the only time you can communicate directly with the system operator.

The Sysop is a mysterious character who, because of the essentially anonymous nature of the bulletin board and the power he wields over the entire operation, seems like some electronic genie. You read material produced by the Sysop whenever you take a look at the bulletins from the user group menu, but the conference session allows you to ask him direct questions. And once you've made a few journeys through the caverns of the information service, you'll probably have a few good questions to ask.

However, you might feel more comfortable watching a conference in its entirety before attempting to participate. Conferences have their own rules of etiquette so that people can share the same forum without interrupting each other in mid-sentence. And M.A.U.G. users, like any subculture, form cliques. You'll soon discover that much of the conference is taken up by various long-distance "friends" hailing each other on-line. Between the electronic glad-handing, however, the users and the Sysop provide some useful information.

Here's an example from a conference that was held a few months back with Steve Wozniak as a participant.

(30,Ed Bernstein) Are you Woz?

(30,Maug Demo) Yes, I am Woz.

(30,Pete Kosel) Aha!

(30,Ed Bernstein) Are you able to talk about new hardware?

(30,Woz) I can talk about new hardware.

(30,Ed Bernstein) Woz, comment on Peanut or new Apple hardware upcoming?

(30,David Humphrey) What's the best modem for the Apple?

(30,Woz) I like Apple Cat II. Peanut is Edsel, not enough dealer margin, not enough home software yet.

(30,Bill Cook) Go Roger Kaplan.

(30,Roger Kaplan) Is the atmosphere at Apple as homey as it used to be, or is it becoming a monolith like IBM?

(30,Woz) Apple is more of what it began as than any other large successful computer company, but it is well managed with greater structure."

WHAT A DEAL

31 All-Time Favorite Programs for the Macintosh™

Graph	Slot Machine	Craps
Shape Maker	Prime Factors	Hangman
Connect 4	Quadratic Roots	Lissajoux
French Quiz	Check Balancer	Recipe Box
Algebra Drill	Othello	TicTacToe
Simon	Alphabetize	Calendar
Super Simon	Word Search	Calculus
Home Accountant	Metric Length	Reverse
Mastermind	Prime #'s	Hex-Dec
Towers of Hanoi	Chemistry Drill	Math Drill
	Interest Table	

All on one disk for only \$29.95

31 Programs, written in Microsoft Basic for the Macintosh, with a 64-page Manual in a vinyl folder, all for only \$29.95. These 31 programs, listed above, are on one 3½" flexible disk and include Business, Data Base, Games, Finance, Utilities, Education, and Science, for less than 97¢ per program.

Visa and MasterCard accepted. Add \$1.75 for Shipping/Handling.

Brownbag Software
div. of Microcomputer Service Corp.
8208 N. University St.
Peoria, IL 61615
Phone: (309) 692-7786

Dealers inquiries invited.

*Macintosh is a trademark licensed to Apple Computer, Inc.

Circle 128 on reader service card

STAND OUT IN A CROWD!

Macinshots Photo Album #1

GRAPHICS OF INCREDIBLE RESOLUTION!! People, buildings, cars, animals, athletes, party items, landscapes and more. Enlarge, reduce, copy, rotate, or combine MACINSHOTS images for your notices, invitations, ads, and announcements. More than 100 TRUE PHOTOGRAPHIC IMAGES in MacPaint files ready for use on your Macintosh™.

Only \$39.95 until Dec. 15, 1984. (regularly \$49.95.) Instant Visa/MC orders call: (415) 493-9500. The PERFECT Christmas gift...

ORDER TODAY!



Clip this ad and mail today to: Design Loft Inc., Box 1650, Palo Alto, CA 94302. Enclose your check for \$39.95 plus \$5.00 shipping and handling (CA residents add \$2.60 sales tax.) Be sure to include your name, address, and zip code. Add \$39.95 + Tax for each additional disk.

Macintosh is a trademark licensed to Apple Computer Inc. MacPaint is a trademark of Apple.

Circle 126 on reader service card

As you can see, conferences give you a chance to talk to industry leaders and air your opinions. If for no other reason than entertainment, you should tune in on one sometime. What's your handle, good buddy?

I've been wandering through the caverns for hours. In the last few miles the going has definitely gotten easier. Wait, is that light up ahead? I've been groping in the dark for so long that it temporarily blinds me.

It is daylight. A shaft of light slices through the darkness. This must be where I climbed into the cave. With a few lightning-fast moves on the keyboard I return to the command prompt and enter "Off." Instantly the screen tells me that I'm logged off and that I was connected for... that can't be right. 237 minutes? Just under four hours? Impossible!

As I look up from my Mac, dawn throws its pale yellow rays through the blinds of my room. I guess I've been initiated into the society of CompuServe. Tired, but strangely satisfied, I pull myself out of the bulletin board cavern to reenter the real world. A strange phrase repeats itself in my mind as I drop off to a fitful sleep: "Go PCS 51... Go PCS 51... Go PCS 51... Go PCS 51... Go PCS 51..." □

Jeffrey S. Young is a Contributing Editor of Macworld and a freelance journalist who has written for several national publications, including Esquire. He is the author of Inside MacPaint, forthcoming from Microsoft Press.

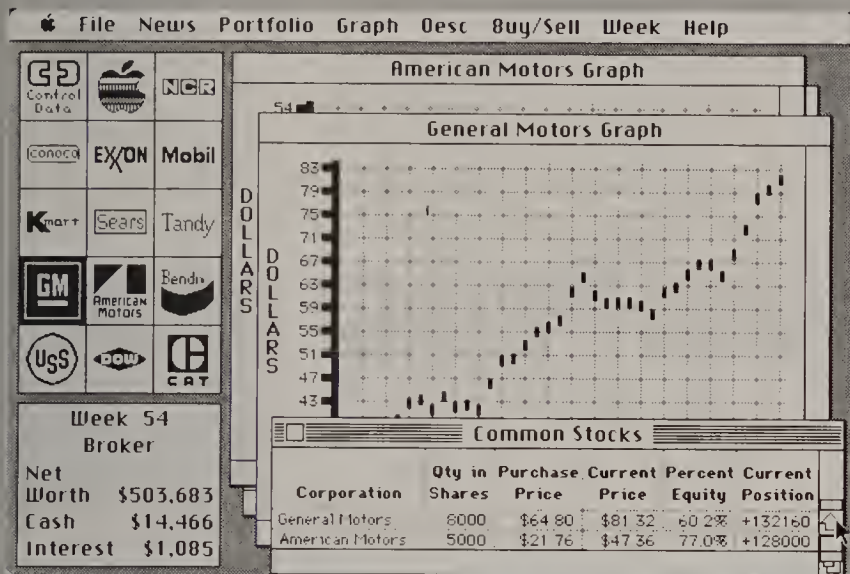
CompuServe, Inc.
Consumer Information Service
5000 Arlington Center Blvd.
Columbus, OH 43220
800/848-8199

The Source
Telecomputing Corp.
1616 Anderson Rd.
McLean, VA 22102
800/336-3366, in Virginia
703/734-7500

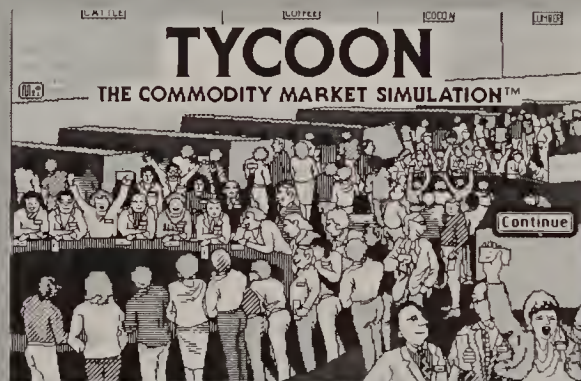
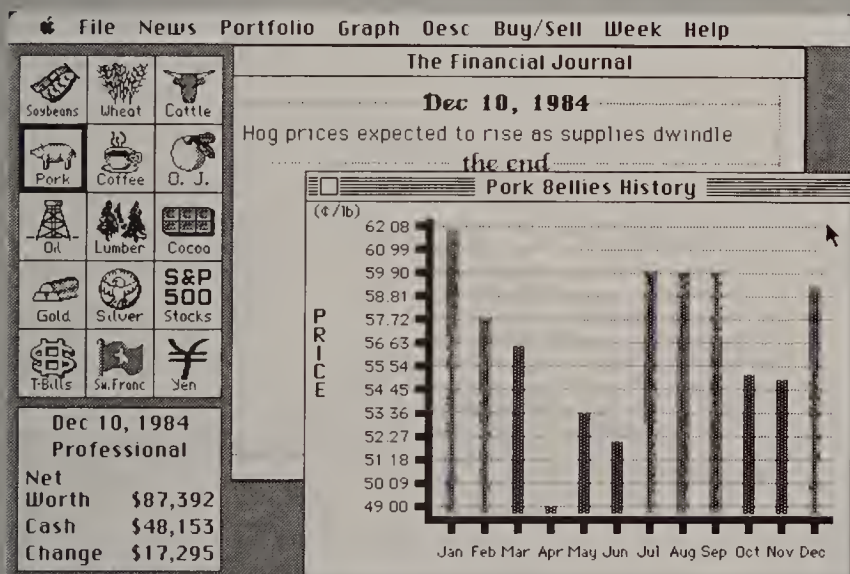
Games investors play!

"...The games can be as logical, yet as arbitrary, as markets themselves. They are certainly not child's play."

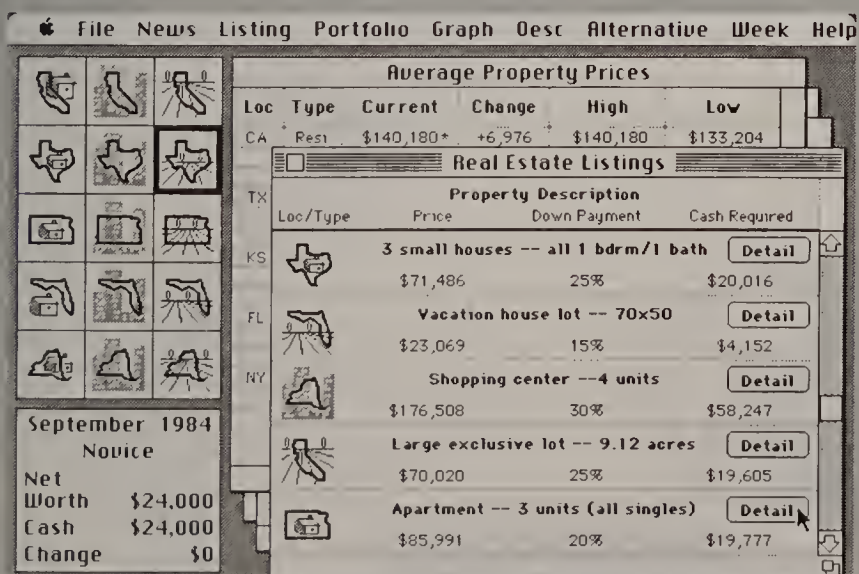
FORBES, July 16, 1984



Interface Age magazine calls Millionaire, "the best stock market simulation we have ever seen." Millionaire teaches you essential stock market concepts, terms, and strategies based on actual stock market trends.



Tycoon lets you experience the high adventure of the volatile commodities market without putting your own money into it. Learn how to invest in agricultural commodities, precious metals, foreign currency, and more.



The factors to consider in real estate speculation — whether in Baron or in real life — are mind-boggling in their complexity: everything from fluctuating mortgage rates influenced by national and international events to neighborhood vandalism to your property.

The action is simulated. The excitement is real! Available from computer stores, software stores, and bookstores everywhere.

BLUE CHIP SOFTWARE
6744 Eton Avenue
Canoga Park, CA 91303
(818) 346-0730



BLUE CHIP SOFTWARE Circle 138 on reader service card

Read Any Good Minds Lately?

With the Mind Prober™ you can. It's an ingenious new software program from the Human Edge™ that lets you read people like a book. And discover things about them that most people wouldn't dream of telling you.

All you do is answer a series of questions and agree or disagree with a list of adjectives describing a specific person. In just a few minutes your personal computer can show you their strengths, weaknesses, sexual interests, and more.

The Mind Prober delivers a personality profile on your subject that's so accurate, it's frightening. You'll know what makes them tick. And that's a tremendous advantage in figuring out how to get what you want from someone. Anyone. In a business

situation, or a personal situation.

Pick up the Mind Prober today. And get a piece of someone's mind.

The Mind Prober is available at fine retail and computer stores everywhere. In the United States call 1-800-624-5227 (in California 1-800-824-7325) for more information. Mind Prober is another practical expert systems program from the Human Edge™ Software Corporation.

Software That Lets You Read People Like A Book.

Mind Prober™

IBM • Apple • Macintosh • Commodore



Circle 153
on reader
service card



MACTYPE FROM PALANTIR. THE TYPING TUTOR THAT IS

F

FIRST

Palantir knows that if your Macintosh™ is to be fruitful, you must first conquer the keyboard. And for many, that means learning how to type. So, Palantir created MacType. It's the first typing tutor for the Macintosh to put to use benefits of proven teaching techniques that speed up learning. Simply, MacType uses mental patterning to reinforce manual exercises. It teaches your fingers and your brain rather than your eyes, and you learn more quickly. If one of your first tasks on the Macintosh is to learn how to type, think of MacType first.

A

ADVANCED

Palantir designed MacType to be the most advanced typing tutor for the Macintosh that is available today. MacType takes full advantage of Macintosh's flexible screen displays and the simple functioning of its mouse to teach you how to type. All the know-how that has gone into the most complex Palantir Software was used in the development of MacType. You're getting state-of-the-art technology even in this basic program. It takes advanced skill to create a fundamental program that is both fun and mental for the user. And you get MacType's advanced features at a price that is very competitive.

S

SIMPLE

Palantir has also designed MacType so that it is amazingly simple to learn and use. Because of the teaching principles inherent in the program, you will get up to an effective typing speed in a very short time. You can also use the skills you learn on MacType to operate any typewriter keyboard, not just the Macintosh. Compared to the other typing tutors, MacType will actually let you enjoy learning. You may like it so much that even after you've mastered its touch-typing technique, you'll go back to the MacType exercises to sharpen your skills and increase speed. MacType shows that working smart can be working simple.

T

TESTED

Palantir thoroughly tested MacType to insure that it will work for you. With it you will learn to type fast. MacType should be your first choice. It is based on advanced programming technology and is still simple to learn. MacType is another quality, "No Bull" product from Palantir. If you want to learn more, contact

**PALANTIR®
SOFTWARE**



MACTYPE™

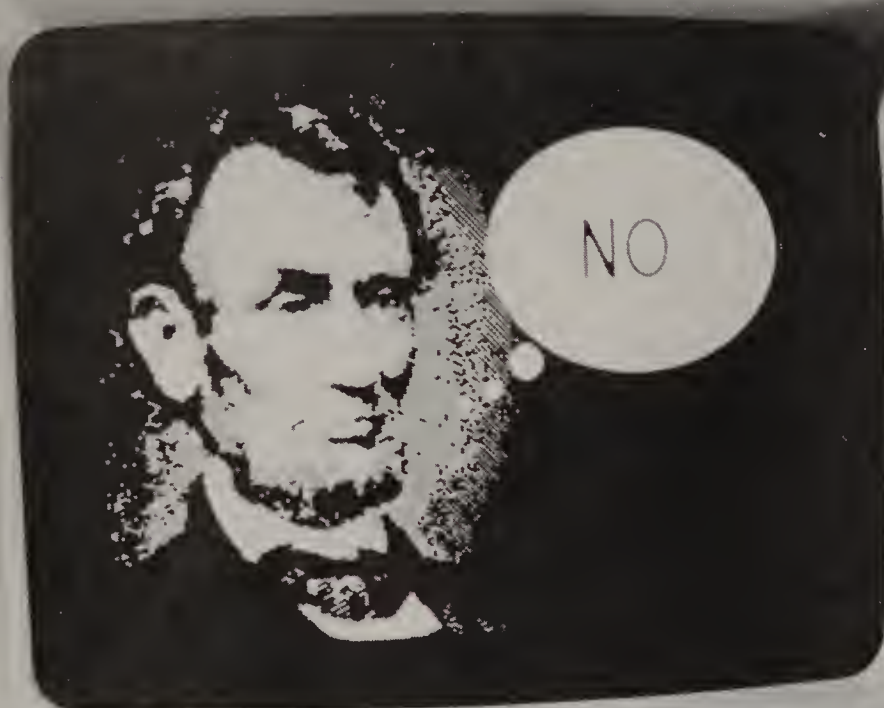


MACINTOSH IS A TRADEMARK LICENSED TO APPLE COMPUTER, INC.
PALANTIR AND MACTYPE ARE TRADEMARKS OF PALANTIR, INC.

**PALANTIR SOFTWARE · 12777 JONES ROAD · SUITE 100
HOUSTON, TEXAS 77070 · CALL TOLL FREE 1-800-368-3797
IN TEXAS CALL 713-955-8880**

Circle 74 on reader service card

Are all camera created equal?



New Image Technology, Inc. presents
MAGIC, the first professional quality camera in-
terface for the Macintosh computer.

Now you can use a real television camera to enter photographs and drawings into your Macintosh. MAGIC (Macintosh Graphics Input Controller) is a device that connects any black and white or color television camera to the Macintosh Computer.

You can use your camera or ours.

For one low price, MAGIC can give you everything you need to start immediately creating pictures and manipulating them with MacPaint.

Macintosh Camera Interface Score Card

Macintosh Camera Interface Score

OTHER	MAGIC	
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Captures black/white full screen pictures (512 x 342) in under .36 seconds
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Fast focus mode on the Mac screen at 5 frames/second.*
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Automatically creates patterned pictures.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Can adjust the amount of pattern overlap.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Can create full screen (512 x 342) MacPaint disk files in one operation.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	100% mouse driven camera interface (no messy knobs or buttons).
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Connector for real-time monitoring of incoming video signal.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Option to connect interface to either serial port A or B.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Freedom to scale or stretch incoming video pictures on the fly.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	38 user-selectable patterns to build picture from.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Quick "launch to MacPaint" (without returning to the desk top).
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Can easily assign any intensity level to a specific pattern.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Displays MacPaint disk files full screen (512 x 342) in under 2 seconds.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Accepts any NTSC video camera (black & white, or color).
<input type="checkbox"/>	<input checked="" type="checkbox"/>	All power supplies and cables supplied.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	1 year parts and labor warranty.

camera

camera	
<input type="checkbox"/>	Horizontal resolution 550 dots.
<input checked="" type="checkbox"/>	Vertical resolution 700 lines.
<input type="checkbox"/>	Light range 200,000 to 1.
<input checked="" type="checkbox"/>	Can accept popular 35mm lens with "C" Mount Adapter.
<input type="checkbox"/>	2:1 scan interlace.
<input checked="" type="checkbox"/>	Camera supplied with 16mm f/1.6 lens.
<input checked="" type="checkbox"/>	*A camera interface without a fast focus mode is nearly impossible to adjust without an external monitor.

Mr. Lincoln was captured from a five dollar bill by the MAGIC camera equipped with a 200mm telephoto lens.

Only the background — and Mr. Lincoln's comment — were created by MacPaint.

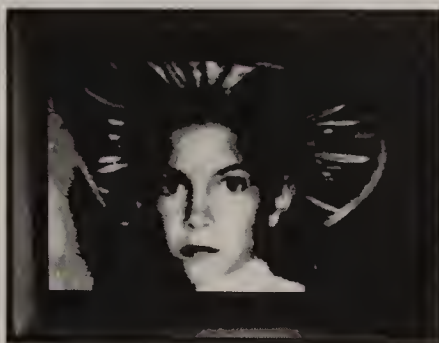
*A camera interface without a fast focus mode is nearly impossible to adjust without an external monitor.

Interfaces

Look at the versatility of the MAGIC camera interface . . .



Original



Gray Scale



High Contrast



Screen images shown as captured by MAGIC and unedited. *Old Town* is from page 133, Sept-Oct. '84 Macworld

Add MacPaint, and look what you can do . . .



Captured . . .



Edited . . .



Voilà!

If you can see it . . . your Macintosh can save it . . . edit it . . . and print it . . .

through the magic of . . .



MAGIC includes:

1. An electronic television camera interface controller
2. A Macintosh diskette with a MAGIC application program
3. All the necessary connecting cables
4. A high quality black and white television camera with lens and power supply

Circle 90 on reader service card



MAGIC Complete	\$495.00
MAGIC Without Camera	350.00
Camera Only	175.00
Shipping and Insurance	Free

Maryland residents add 5% sales tax.

To order, call or write:

New Image Technology, Inc.
Suite 104
10300 Greenbelt Road
Seabrook, MD 20706
301/464-3100

Orders can be prepaid or charged to Visa or MasterCard. On charge orders, please include your card number and expiration date.



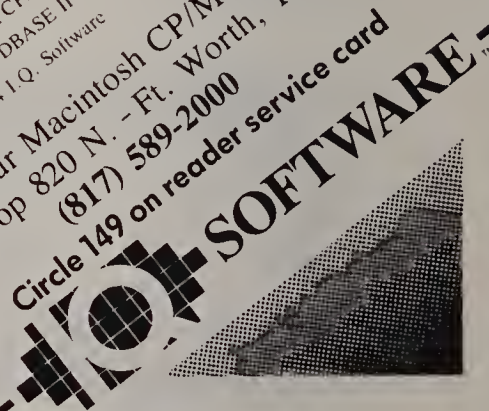
SOFTWARE™

CP/M® FOR THE Macintosh™

Now, I.Q. SOFTWARE, in one historic move, brings more proven programs to the Macintosh than have existed to date with CP/M®. For The Macintosh™. Join the over 1 million CP/M users running famous programs like Wordstar™ and DBase II™. They know CP/M is fast, powerful and easy to use. Now. It is available for the Macintosh, and Only from I.Q. Software.

Macintosh is a registered trademark of Apple Computer, Inc. CP/M is a registered trademark of Digital Research, Inc. WORDSTAR is a registered trademark of Micropro. DBASE II is a registered trademark of Ashton-Tate. © 1984 I.Q. Software

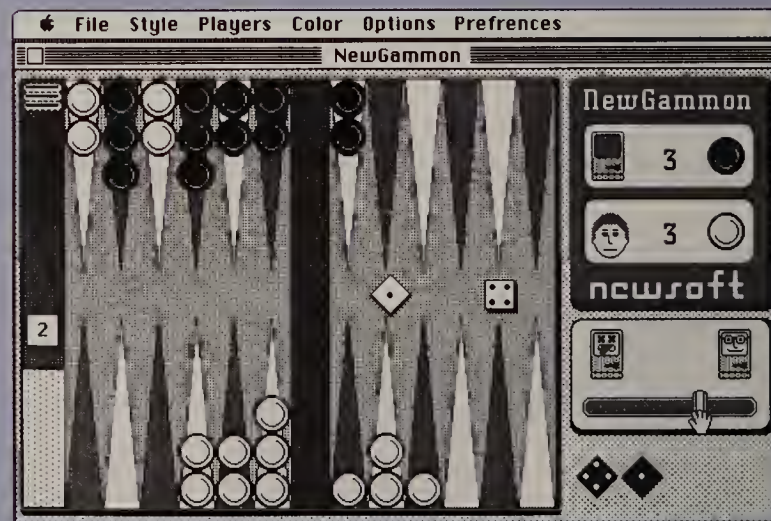
Call or write for your Macintosh CP/M Software Catalog.
2229 E. Loop 820 N. - Ft. Worth, TX 76118
(817) 589-2000
Circle 149 on reader service card



NewGammon

Backgammon as Unique as the Macintosh™

For centuries people have played backgammon. Now NewSoft makes backgammon new again. Experience the challenge of playing against the Macintosh. Never before has it been this easy to move your pieces or double the stakes. Imagine setting up any situation to see how the computer plays it out. NewGammon has powerful features like changing sides or skill levels at any time. Even play against a friend or watch the Macintosh battle itself. If that doesn't challenge you enough, switch to *SPEED* backgammon where there are no turns. Move your pieces as fast as you can . . . NewGammon doesn't wait!



Challenge your Macintosh to a Backgammon Tournament or Race it in a High Speed Duel.



newsoft

ReadySetGo™
ReadySetGo
ReadySetGo

Professional typesetting
for the Macintosh

Manhattan Graphics

163 Varick Street, New York, NY 10013 212-924-2778

ReadySetGo is a trademark of Manhattan Graphics Corporation

©1984 Manhattan Graphics Corporation

Circle 2 on reader service card

Macworld Gallery

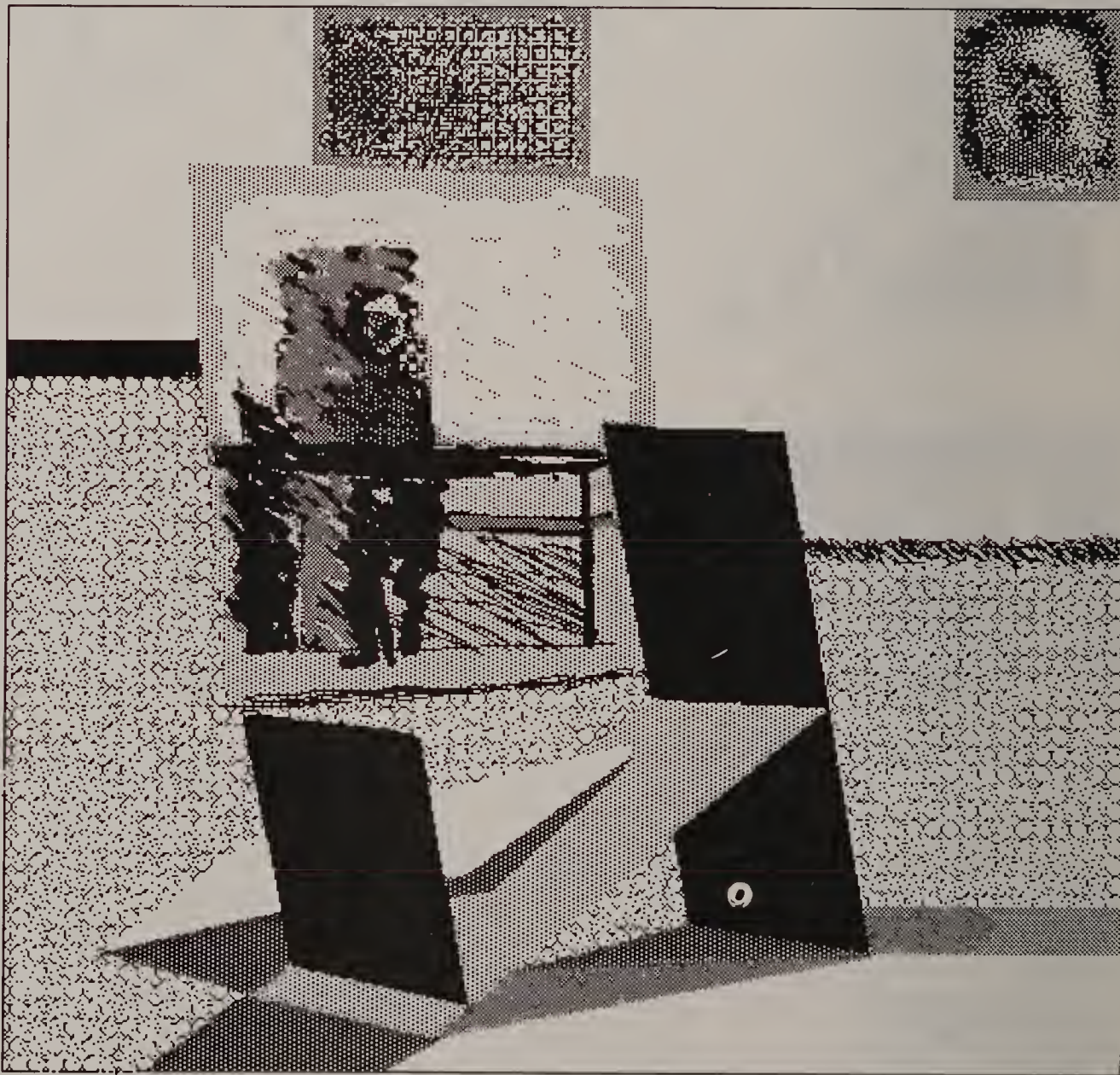
An exhibition of Macintosh graphics

Edited by Erfert Nielson

This month's Macworld Gallery presents the winners of the first Macworld Art Contest (cosponsored by Macworld and Apple Computer). Our panel of judges will choose three winners each month and award a first prize of \$500 and two second prizes of \$250 each. The judges will give preference to original drawings, rather than to those based on photographs or other works of art.

The December Gallery also features a special exhibition of children's art, with a commentary by Neale McGoldrick, who is currently working on a book of MacPaint projects for children.

All drawings sent to Macworld Gallery are eligible for the contest. Send a paper copy of your artwork and a detailed description of the techniques you used to create it to Macworld Gallery, 555 De Haro St., San Francisco, CA 94107. Please include your address and phone number with each submission. If your drawing is selected, we will ask you to send a copy of it on disk. All disks become the property of Macworld; winning drawings become the property of Apple Computer.



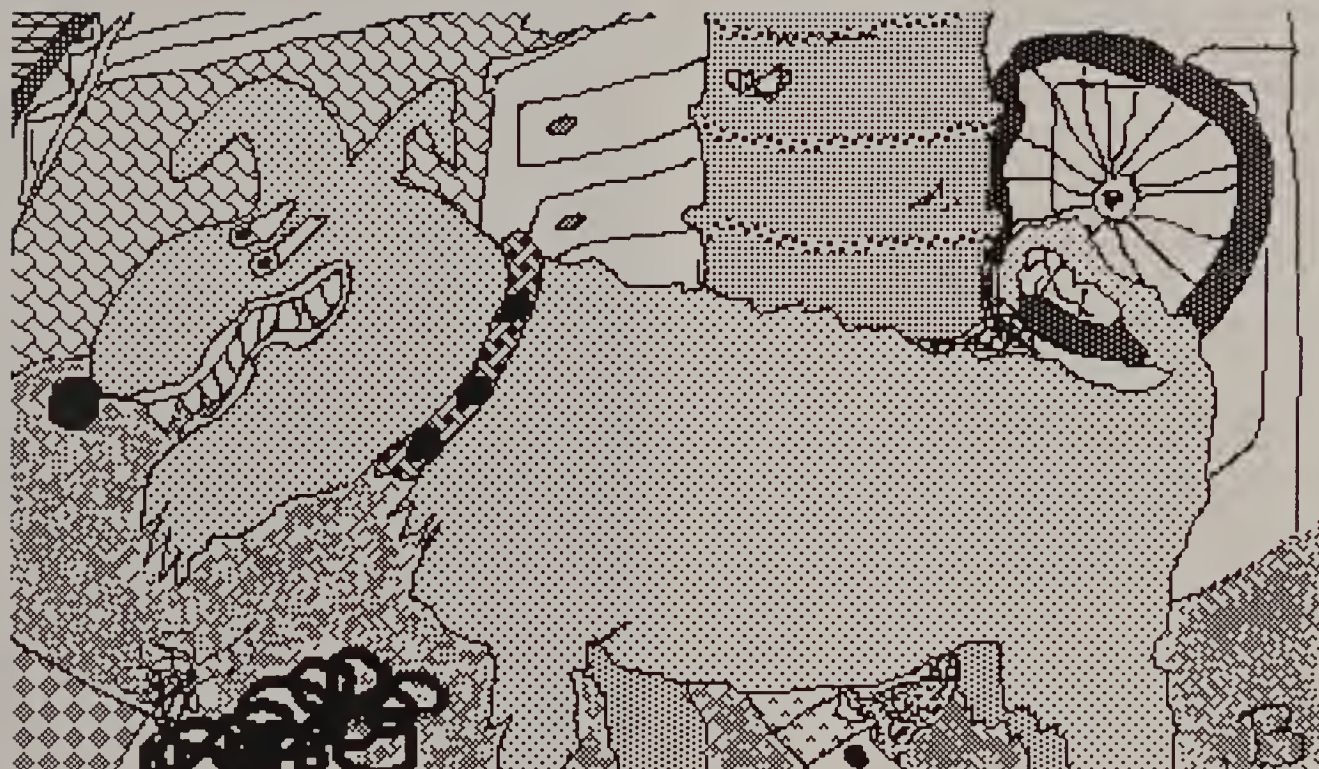
Composition with Bench and Mirror

\$500 First Prize

Composition with Bench and Mirror

I began by creating the large forms—the bench, the mirror, and the shadows on the floor—with *MacPaint*'s filled shapes. Because the filled shapes lacked borders, I filled in the floor with the paintbrush instead of the paint bucket. I used the spray can to apply a second pattern over the floor pattern. I created the image in the mirror with the paintbrush, using three or four different brush widths. I produced the images in the background by spraying several patterns onto filled shapes, then used *FatBits* to clean up the untidy areas.

Keith Watanabe
Chicago, Illinois



Junk Dog

Junk Dog

I wanted a setting that would present a wide variety of textures, so I decided on a garbage dump. Then I added one of my favorite animals. I outlined the various shapes with the pencil and filled them in with the paint bucket, trying to use the best tone and shade for each section. The Undo command and the *FatBits* option were very helpful, especially since this was the first time I'd used the Macintosh.

Jamey Barnard
Chicago, Illinois

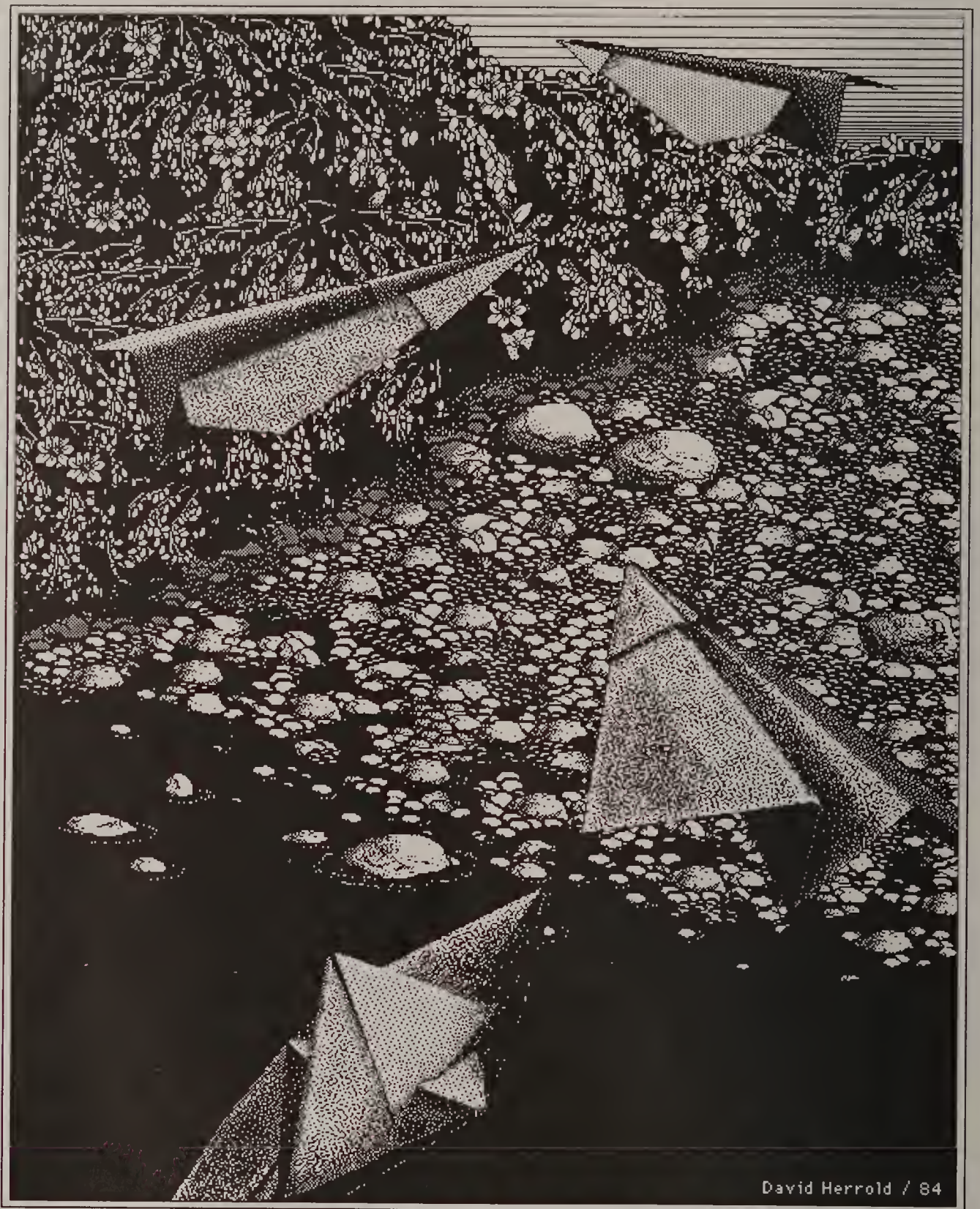
\$250 Second Prize

Paper Airplanes

An overhead view of flying paper airplanes is not a common sight and lends an air of fantasy to my picture. I drew this picture partly because I wanted to make use of *MacPaint*'s editing features. When I work in *MacPaint*, I like to draw a background environment—in this case the rocks and bushes—and then paste objects created in a separate file into it. This allows me to experiment with the overall design and eliminates the problem of maintaining the continuity of background features that are overlapped by foreground objects.

Using the pencil in FatBits, I made four or five small rocks, then lassoed and copied them repeatedly to assemble a small area of the pattern. After I had created this area, I selected and copied it to fill a larger space. I used the same technique to draw the bushes. When the background was finished, I pasted in each airplane and moved it into position.

David Herrold
Greencastle, Indiana



Paper Airplanes

\$250 Second Prize

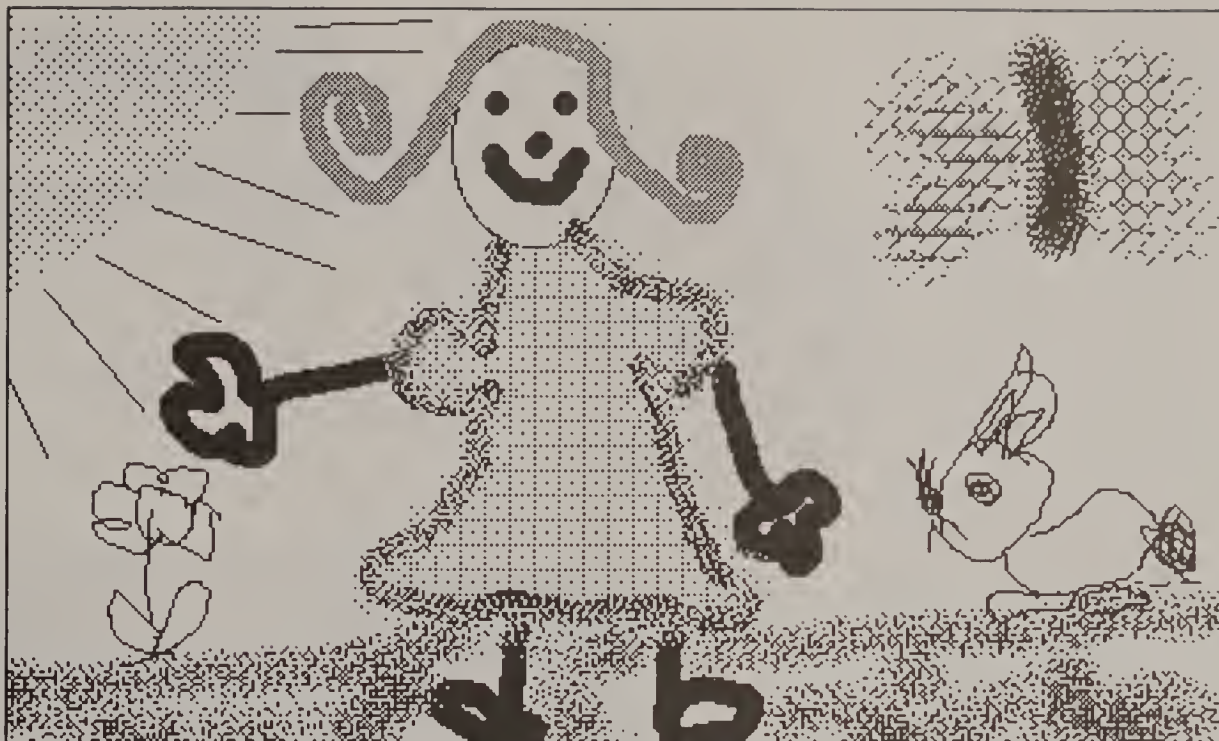
Children's Drawings on the Mac

The first reaction most children have to drawing with *MacPaint* is that it is "easy." Some teachers might insist that it is too easy, because children do not have to work very hard to get good results. However, learning can never be too easy if it gives children a sense of their possibilities and pride in their accomplishments.

MacPaint is so enthralling that it might well be classified as entertainment rather than education. Nevertheless, youngsters can learn a great deal from working in *MacPaint*. Children as young as 3 or 4 can successfully control the mouse and create pictures. What is more, the drawings that children create with *MacPaint* are unique and personal in ways that drawings done with the Logo language rarely are.

Many adults feel timid when they approach *MacPaint*, not only because they feel somewhat anxious about computers, but also because they feel insecure about their artistic abilities. They are likely to find using the mouse more awkward than using a pencil, and they feel embarrassed when the sketches on the screen look clumsy.

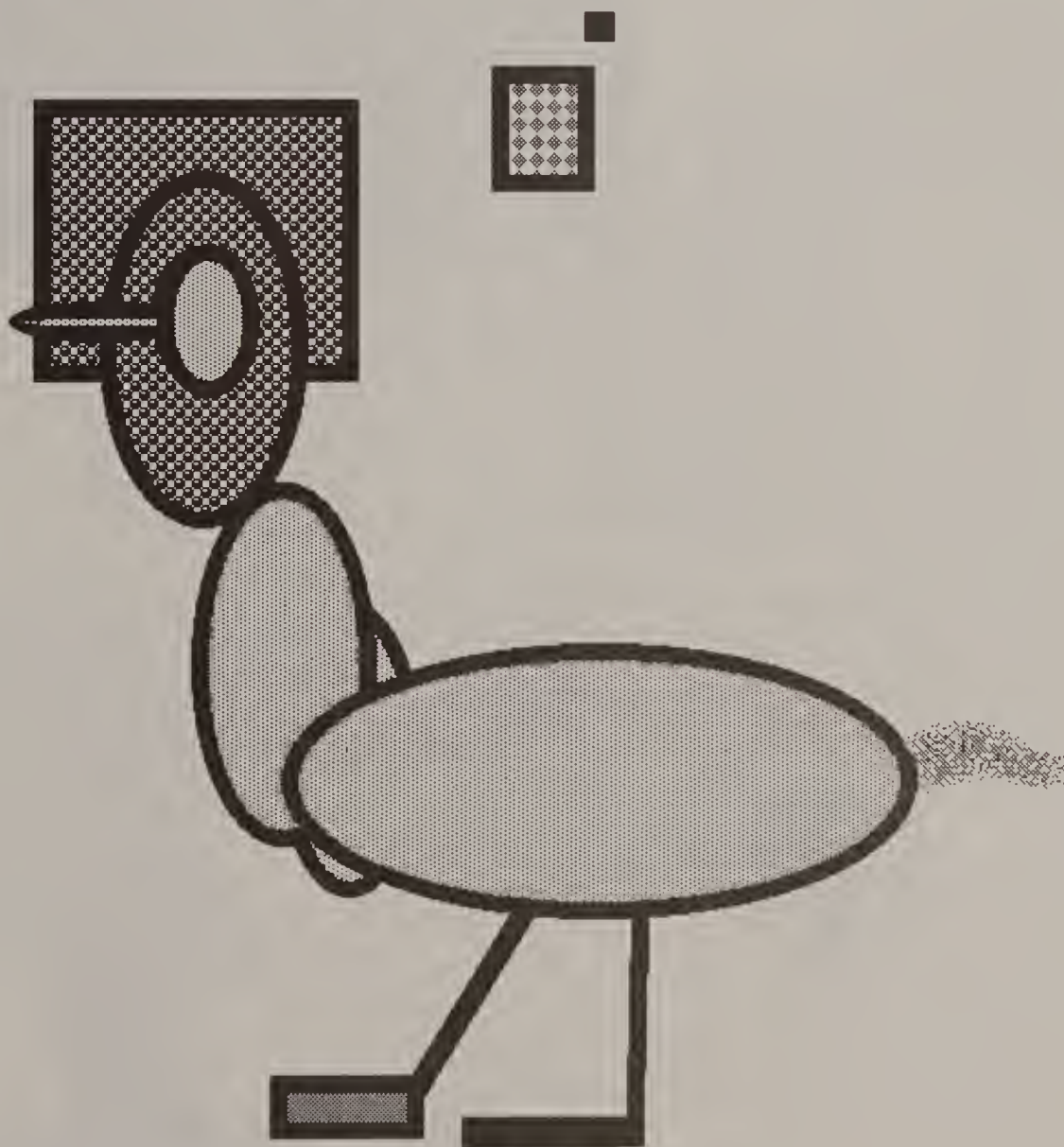
For small children, using *MacPaint* is very different. Young children tend to draw with a whole-arm motion, so they find the mouse easier to hold than a pencil. Furthermore, they take great pride in



Missy and the Bunny

Missy Pyle, age 7

Austin, Texas



Walking Duck

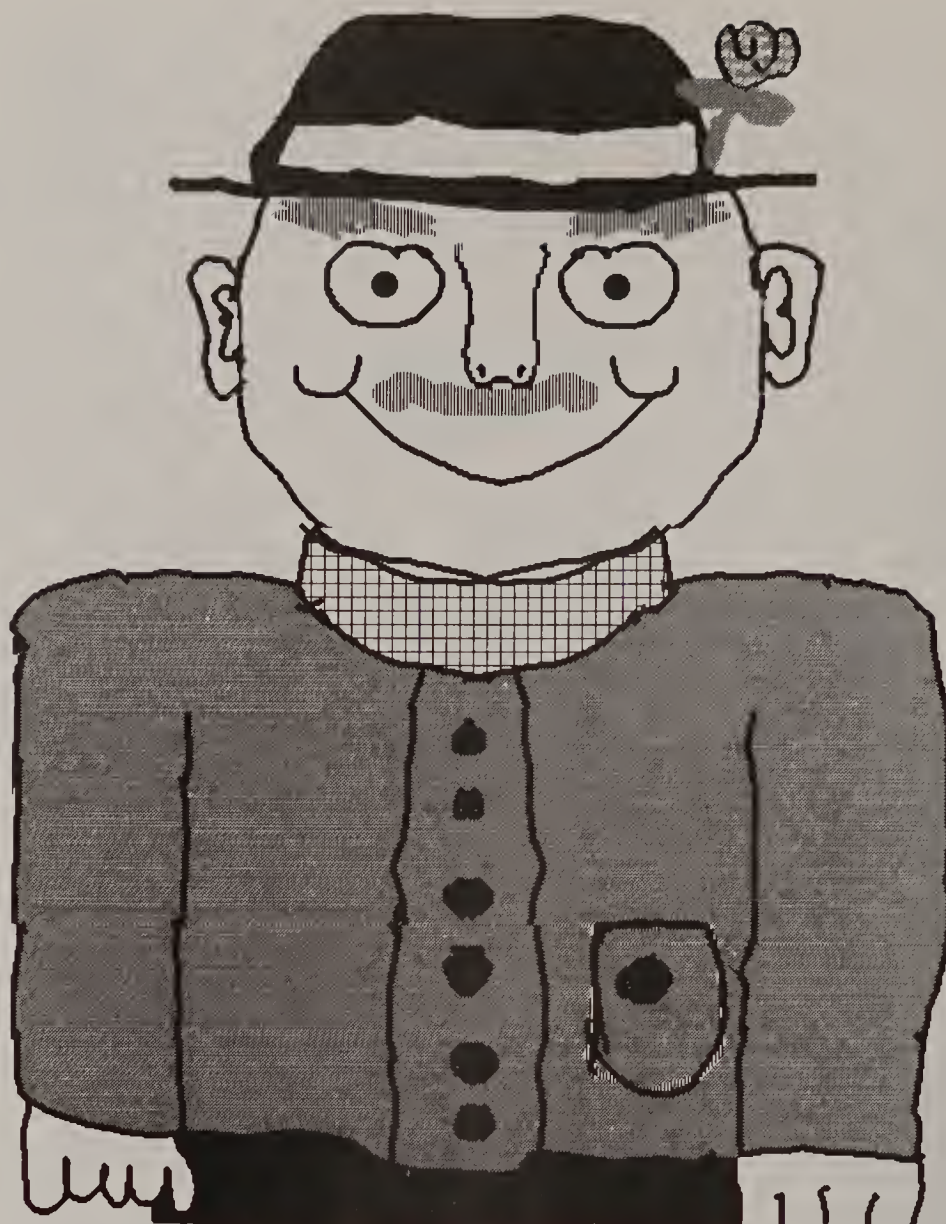
Rod Wadsack, age 5

Chatham, New Jersey

their results because their "scribbles" look neater and more finished on the screen than they would on paper. Some children's *MacPaint* drawings possess the strength and emotion of adult abstract art. One would be hard-pressed, for example, to distinguish between designs created with Brush Mirrors by four-year-olds and those created by adults in the same way.

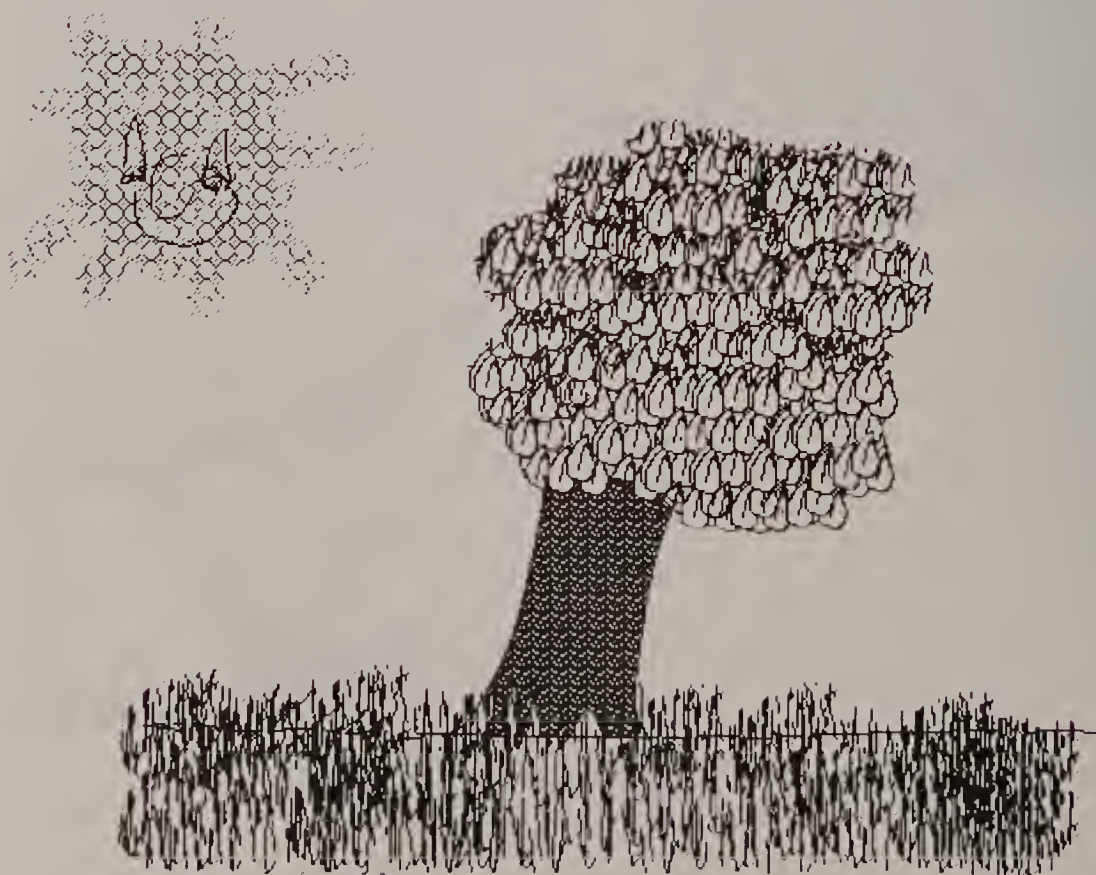
MacPaint's greatest advantage for young children is that it allows them to explore design ideas that are more advanced than drawings they can produce with traditional tools. Children would like to create perfect circles and rectangles and keep patterns inside borders, but they have difficulty achieving this control on paper. With *MacPaint* they acquire this power, and they immediately respond to it by making sophisticated design decisions that one would rarely expect of much older children.

While Logo introduces children to simple geometric shapes—squares, circles, triangles, and polygons—*MacPaint* introduces them to other graphic possibilities. They can fill areas with patterns, reverse black and white elements, create custom patterns, and stretch, shrink, copy, and rotate shapes. Children are given control over a sophisticated art tool and allowed to exercise their own decision-



Derby Man

Stephen Howard, age 8
Chatham, New Jersey



Computerized Nature

Krista Wark, age 10
Morristown, New Jersey

making abilities with just the press of a button. *MacPaint*'s features enable children to quickly sense the graphic possibilities of a page.

For small children, probably the most significant aspect of *MacPaint* is the Undo option. This option enables them to experiment and fix their mistakes. Undo releases children from the fear that if they experiment with their drawings they may "mess them up."

MacPaint may give older children the security to try out some graphic ideas at an age when they are otherwise very self-conscious about their artistic abilities. They may feel that their pencil drawings are too childish, but they invariably take pride in their accomplishments with *MacPaint*. The formality of neatly ruled edges, perfectly aligned lettering, and even tones gives their work a professional look that makes them proud to display it. □



Portrait

Alexander Southwell, age 12
New York, New York



Guarded Castle

Matt Simms, age 12
Franktown, Colorado

We Now Ship



- Order Line 1-800-622-6659
- Order Processing & Other Information 602-224-9345
- Order Line Hours Mon-Fri 8:30 - 5:30 Saturday 9:00 - 1:00

Address 1943 East Indian School Road
Suite 194
Phoenix, Arizona 85016



- **No Charge for VISA and Mastercard**
- Shipping and Handling Add \$10.00 for **Federal Express** or \$5.00 for UPS Ground for Total Order
- Personal and Company Checks Will Delay Shipping 2 weeks
- COD Orders Add 2%
- Call on Purchase Orders
- Prices & Availability Subject to Change Without Notice

CALL FOR A **FREE**
SUBSCRIPTION TO THE
SOFTWARE ADVISOR NEWSLETTER

SOFTWARE SPECIALS

Multiplan	\$125	Helix	\$249
Chart	\$ 81	Mac Forth (Level II)	\$159
DB Master	\$120	PFS: File/Report	\$120
Filevision	\$129	Overvue	\$179

DATA BASE MANAGERS

First Base	\$119
Habadex	125
Main Street Filer	125
MegaFile	119
MegaMerge	79
Think Tank	85

SPREAD SHEETS

Chart	See Special
Multiplan	See Special

LANGUAGES

Basic	\$ 99
Mac Forth (Level I)	99
Mac Forth (Level II)	See Special

MONEY MANAGEMENT

Dollars & Sense	\$ 89
-----------------------	-------

COMMUNICATIONS

Daw Jones Straight Talk	\$ 50
-------------------------------	-------

ENTERTAINMENT

Deadline	\$ 36
Enchanter	30
Fragger	30
Infidel	30
Mac Slots	49
Millionaire	38
Mause Stamped	25
Pensate	25
Planetfall	24
Sargon III	32
Sea Stalker	30
Socerer	30
Starcrash	36
Suspended	36
Trivia	32
Transylvania	25
Witness	30
Zark I, II, III	30

UTILITIES

Click Art	\$ 32
Da Vinci	35
Mac Pic #1 & 2	32
Mac The Knife	29

ACCESSORIES

3M Diskettes	\$ 35
BASF Disks (5 Pack)	19
Diskette Box	21
Dust Cover	10
MacTate Carrying Case	79
Mac Printer Carrying Case	49
Maxell Disks (10 Pack)	33
Starter Pack	55
Surge Suppressor	35
Swivel Stand	23

HARDWARE

Kensington Portable Modem	\$ 99
MicroCom 1200 Baud Modem	475

11-84

Circle 55 on reader service card

Insanely Great Accessories!

BEFORE YOU BUY HABADEX: LOOK AT THESE ACCESSORIES!

About WindoWare...

Phone Book
Speller

Calendar

Our WindoWare Calendar® is indispensable for anyone who keeps a schedule. The perpetual calendar always shows you the right date. So you can see today, or tomorrow (or even next year) at a glance. Quickly see how your month is shaping up, then double click any day to edit or review your schedule. And you've always heard that you can't take it with you, right? Wrong! Just paste your appointments into the clipboard or MacWrite® and print them out so you'll be on time — all day, every day.

Our Phonebook helps you keep track of all your contacts (business or otherwise). Complete with names, addresses and even extra phone numbers! And they're always kept in order, so you can look up anybody in a flash—and dial with just a click!

Because these are desk accessories they won't be sitting on another disk when you need them most. They're just a click away, no matter what you're doing on your Macintosh™.

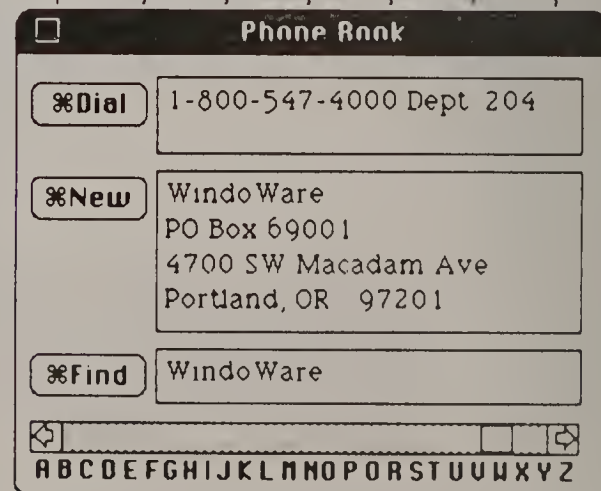
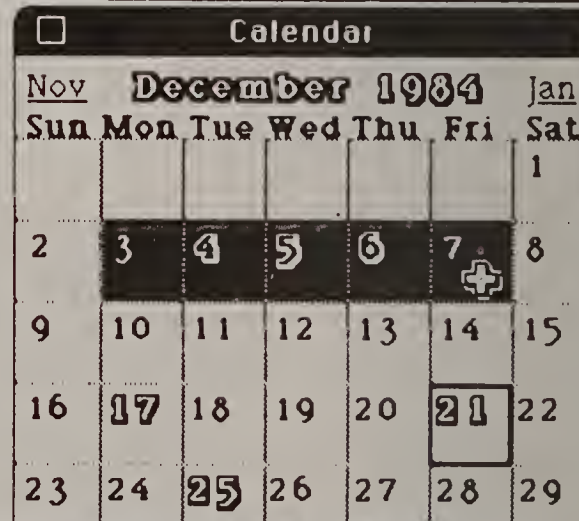
We build powerful desk accessories for one good reason: If a tool isn't convenient, you won't use it. After all, isn't that what the Macintosh is all about?

Order your WindoWare Calendar or Phonebook today for just \$49.00 each!
Or team up with TWO great products for \$79.00. Just call 1-800-547-4000, Dept. 204.
(In Oregon or outside U.S. call 1-503-684-3000, Dept. 204). Visa or MasterCard accepted.
Or mail your order and check to:

WindoWare

Macadam Publishing, Inc.
P.O. Box 69001
4700 SW Macadam Ave.
Portland, OR 97201.

1984 by Macadam Publishing, Inc. WindoWare is a trademark of Macadam Publishing, Inc. Macintosh and MacWrite are trademarks of Apple Computer, Inc. Habadex is a trademark of Haba Systems, Inc.



Circle 119 on reader service card

File Edit Play

Klondike

Solitaire for the Mac!

Match your skill and luck against **Klondike**, the challenging new game for the Macintosh.

Klondike is the most popular version of solitaire, so you probably already know the rules. Even when you know the rules, though, Klondike is tough to beat.

Completely mouse-controlled, the odds against beating Klondike are 30-1. You might be tempted to cheat when facing those kind of odds, but don't get caught peeking or you'll be penalized!

Scoring records may be kept for elapsed time taken to win or for progress made before losing. This allows you to compete not only against Klondike, but against your friends too.

So if you're looking for a fun, challenging game for the Macintosh, discover Klondike. Only \$39.95. AVAILABLE NOW!

To order, call Toll-Free: In U.S. 800-772-2666, Ext. 956. In California, 800-227-2634, Ext. 956. MasterCard and Visa Accepted. Or see your local software dealer. Send check or money order to: CCC, 465-A Fairchild Dr., Ste. 122, Mt. View, CA 94043, 415-968-7511. Dealer inquiries invited. Add \$2.00 shipping and handling. California residents add state sales tax.

Hey, MAC!

Our newsletter, **Hey, MAC!**, has become the most popular Macintosh product we carry. **Hey, MAC!** examines the ever-changing and always exciting Macintosh marketplace: we offer tips on using your Mac, product reviews and a software/hardware availability list. And **Hey, MAC!** is not just a selling piece—our reviewers call 'em like they see 'em.

Originally we published **Hey, MAC!** to give our customers updated information on new products and their availability. Friends with Macs started calling for individual subscriptions, so we give up—**Hey, MAC!** is now available to everyone. You can order 5 issues of **Hey, MAC!** for only \$10, and your subscription starts with the current issue. (Volume 1, Number 1 has sold out).



GAMES

Baron.....	\$ 44.88
Frogger.....	29.88
Forbidden Quest.....	34.88
InfoCom Games.....	CALL
MacManager.....	39.88
MacSlots.....	54.88
Millionaire.....	44.88
Mouse Stampede.....	29.88
Murder by the Dozen.....	34.88
Pensate.....	29.88
Run for the Money.....	39.88
Sargon III.....	39.88
Transylvania.....	29.88
Trivia.....	39.88
Tycoon.....	44.88
Videx Fun Pak.....	29.88

FINANCIAL/BUSINESS

Dollars & Sense.....	\$ 114.88
Home Accountant.....	79.88
Management Edge.....	179.88
MultiPlan.....	139.88
Sales Edge.....	\$ 179.88

TKI Solver.....	179.88
TKI Management.....	59.88
TKI Engineering.....	59.88
TKI Scientific.....	59.88
Videx MacCalendar.....	29.88

LANGUAGES

Microsoft BASIC.....	\$ 109.88
MacForth (Level I).....	109.88
MacForth (Level II).....	189.88
Softworks "C".....	319.88

WORD PROCESSING

Typing Tutor III.....	\$ 39.88
Mac-Daisywheel.....	
Connection.....	CALL
MegaMerge.....	89.88
Think Tank.....	99.88

DATABASE MANAGERS

1st Base.....	\$ 139.88
Habadex DB.....	139.88
Habadex Adapter.....	39.88
Main Street Filer.....	129.88
MegaFiler.....	139.88
Odesta Helix.....	279.88
Omni 2.....	139.88
PFS: File.....	89.88
PFS: File/Report.....	139.88
Telos Filevision.....	139.88

GRAPHICS

T/Maker Click Art.....	
T/M Personal.....	\$ 39.88
T/M Publications.....	39.88
Hayden Davinci Buildings.....	39.88
Hayden Davinci Interiors.....	39.88
Hayden Davinci Landscape.....	39.88
McPicl.....	39.88
Mac the Knife.....	29.88
Microsoft Chart.....	89.88

HARDWARE

BASF 3 1/2" Diskettes (5 pkg) ...	\$ 24.88
Printer & modem cables.....	29.88
FleldPro Carrying Case.....	79.88
Fllp-N-File Diskette Holder.....	29.88
Kensington Starter Pak: Includes Swivel Stand, Surge Protector and anti-static Dust Cover.....	69.88
Kensington Modem.....	\$ 119.88
Surge Suppressor.....	44.88

Microcom MacModem.....	CALL
MacPhone.....	149.88
Memorex Diskette (10 pkg) ...	43.88
Microline 92 (Mac).....	579.88
Micron-Eye (digitizer/camera)....	CALL
Tecmar MacDrive (5MB).....	CALL
Tecmar MacDrive (10MB).....	CALL
Tecmar MacDrive (10/5MB)....	CALL

TECHNICAL SALES DESK

(603) 881-9855

TOLL-FREE ORDER DESK

(800) 343-0726

Hours: 9:00 to 5:30 EST, Mon-Fri

■ FREE UPS ground shipping on all orders over \$50 (under \$50 add \$2.50 shipping & handling)

■ MasterCard, VISA, American Express, Diners Club & Carte Blanche credit cards accepted

■ No surcharges on credit card orders

■ Credit cards are not charged until your order is shipped

■ All personal checks held 30 days for clearance

■ CODs accepted up to \$1000 (add \$10 for COD handling). Payable with certified check, money order or cash.

■ Software can be returned for an exact exchange only; no credits or refunds issued

■ Sorry, no APO/FPO or foreign orders

■ Allow 10 days for delivery

BOLDFACE ITEMS are currently shipping as of 9-25-84. Call for availability on new products listed in this ad.

HIGH TECHNOLOGY AT AFFORDABLE PRICES
THE BOTTOM LINE

MILFORD, NH 03055-0423 ☐ TELEPHONE (603) 881-9855

Circle 33 on reader service card

MacForms™

BUSINESS FORMS FOR MACINTOSH™

- VIRTUALLY EVERY FORM YOU'LL EVER NEED
- EASY TO USE WITH MACPAINT™
- PERSONALIZE WITH YOUR COMPANY LOGO
- CUSTOMIZE TO SATISFY YOUR UNIQUE NEEDS
- FILL OUT ON THE MACINTOSH™ OR BY HAND
- PRINT OUT AND/OR USE YOUR OFFICE COPIER
- SAVE THE IMAGE FOR YOUR RECORDS

Save time, space and money developing, ordering, stocking, completing, controlling and saving forms.

4 DISK SET FOR ONLY \$79.95

MORE THAN 100 DIFFERENT BUSINESS FORMS:

- Disk 1 Accounting and Financial Management
- Disk 2 Purchasing and Materials Management
- Disk 3 Personnel and Time Management
- Disk 4 Sales and Project Management

TO ORDER SEND CHECK TO:

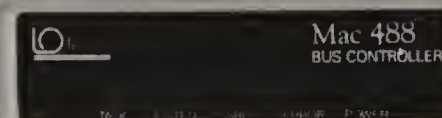


400 North duPont Hwy. • Suite G-13 • Dover, Delaware 19901
OR CALL: (302) 736-9098 VISA/M.C. Dealer Inquiries Invited
Mac, Macintosh and MacPaint are trademarks of Apple Computer, Inc.

Circle 101 on reader service card

AVAILABLE NOW!

IEEE 488 Bus Control for your Macintosh*



The **Mac488™** provides full IEEE 488 bus capability, including controller, talker, and listener functions. Commands received from the Macintosh serial port are converted by the Mac488 into IEEE bus protocol. Both the Mac488 and a printer can be installed simultaneously, without special adapters.

- High-level commands, similar to the Hewlett Packard 85 — ENTER, OUTPUT, REMOTE, CLEAR, TRIGGER, . . .
- Advanced capabilities, including Pass Control, Receive Control, Secondary Addressing, Serial Poll, and Parallel Poll.
- Driver routines for available languages, including BASIC.
- Also available for Lisa, Apple II, Ile, & IIC*.
- \$595⁰⁰ complete.

*Trademark of Apple Computer, Inc.

IOtech

IOtech, Inc.
P. O. Box 21204
Cleveland, Ohio 44121
(216) 321-0609

Circle 73 on reader service card

NEW FOR THE MACINTOSH*
the first in a series of **REALWARE™** from
The Reference Corporation!

HumanForms™

The Schematic System
for Graphic Body Notation
Anatomically and
Proportionally
Correct

The system allows you, using MacPaint®, to select and modify individual body parts and assemble them to create realistic body illustrations. Then insert your HumanForms into notes or documents using Word or MacWrite® word processing software for accurate referral or professional presentation!

Create a "library" of often used models. Body configurations are limited only by your imagination!

Who will use HumanForms?
Those involved in Medical Instruction & Research, Designers, Martial Arts, Art Directors, Artists, Choreography, Burn Units, Person Abuse Centers, Movement/Massage Therapy, Ergonomics, Education and anyone who needs to reference the human body in their work.

Volume 1: Male and Female, three views: Front, Back and Side
Volume 2: same as Vol 1 but with foreshortened views.

*Macintosh, MacPaint and MacWrite are registered trademarks of Apple Computer, Inc. Word is a registered trademark of Microsoft Corp. HumanForms and Realware are registered trademarks of The Reference Corporation.

Send check or money order for \$59.95 for each volume and manual, plus \$3.50 for postage and handling to:

The Reference Corporation

212 Fifth Avenue, Suite 1312
New York, NY, 10010



I've enclosed ☐ personal check
☐ money order/cashier's check in the amount of \$ _____ For Vol. 1 ☐ Vol 2 ☐ Both ☐
Please charge my credit account: ☐ VISA ☐ MasterCard ☐ American Express. Account No. (all digits please)

Interbank No. (MasterCard only) _____
Name of bank _____
Expiration date _____ issuing your credit card _____
Home telephone # () _____

Signature _____
(for VISA/MasterCard/Am. Ex. orders only)

Name _____
Company Name _____
Address _____
City _____ State _____ Zip _____

Circle 36 on reader service card

AVAILABLE NOW

Real Estate and Financial Analysis on The Macintosh™

Four Packages of Advanced Multiplan Models:

Package #1, for Income-Producing Real Estate: Includes detailed cash flow/sensitivity analysis, annual property operating schedule, and more.

Package #2, for General Financial Analysis: Six models, including personal financial statement, critical ratio analysis, lease vs. buy, and more.

Package #3, for Commercial Real Estate Development: Extensive project cost analysis, multi-unit income-and-expense schedule, and lease-tracking model.

Package #4, for Residential Real Estate: Market Analysis by linear regression, mortgage qualifier, and rent vs. buy analysis.

Each package, \$100 plus \$5 shipping

Complete set of four \$325 plus \$10 shipping
and receive free bonus: **Financial Calculator Models**
MC/VISA accepted. UPS Air Freight, no extra charge

RD

RealData, Inc., P.O. Box 691 Southport, CT 06490
203-255-2732 To order, call or write today.

Multiplan is a trademark of Microsoft Corp Macintosh is a trademark of Apple Computer, Inc.

Circle 49 on reader service card

Are You A MacManager™?

SIT DOWN at your desk in the MacManager office and take control of your own company. Find out if you have what it takes to build your own financial empire as you plan your winning strategy.



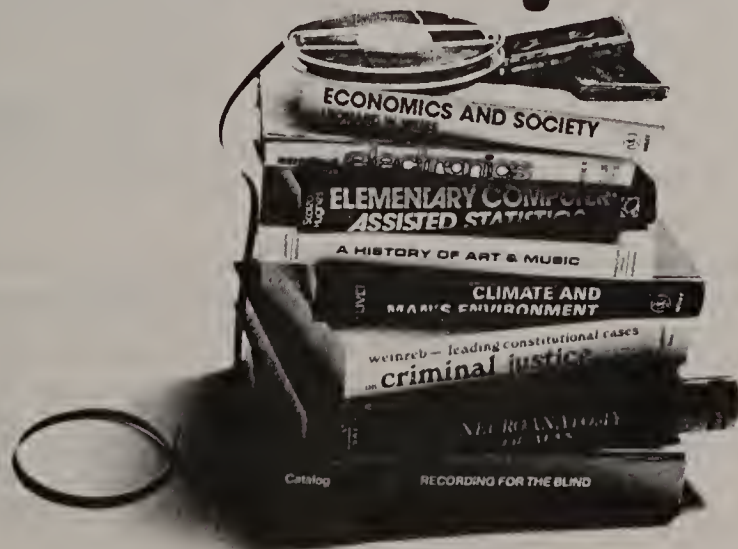
From the vantage point of your office, watch company headquarters grow as the fortunes of your company rise. Read MacTimes and analyze industry reports. Make your decisions (be sure you have enough cash to carry them out!) and watch the results.

A management simulation for the Macintosh \$49.95.

MacManager is available now. To order MacManager contact:
Harvard Associates, Inc.
260 Beacon Street, Somerville, MA 02143
(617) 492-0660.

Circle 76 on reader service card

Close your eyes. Now have someone read this to you.



NEW THE PERFECT GIFT FOR YOUR PRINTER

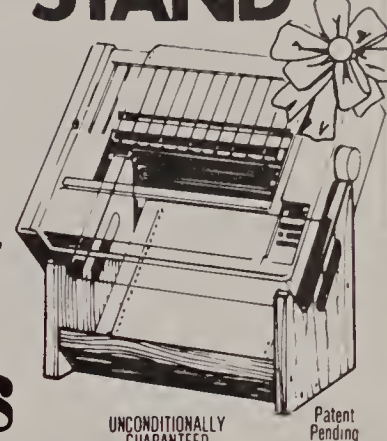
THE PRINTER STAND™

- ELEVATES 45° ANGLE FOR EASY READABILITY
- FITS 80 COLUMN PRINTER
- SAVES SPACE
- BEAUTIFUL SOLID HARDWOODS, HAND-RUBBED FINISH

2 TO 4 WEEKS DELIVERY

SYNERGY PRODUCTS

(812) 897-5351



UNCONDITIONALLY
GUARANTEED

Patent
Pending

ORDER NOW \$44.95 Plus \$2 Postage

Name _____

Address _____

City _____ State _____ Zip _____

☐ Payment enclosed — ☐ Charge my ☐ Visa ☐ MasterCard ☐ Am. Ex. Account No. _____ Exp. Date ____/____/____

☐ LT. POPLAR

☐ DARK POPLAR

☐ WALNUT

MAIL TO: SYNERGY PRODUCTS P.O. BOX 485, BOONVILLE, IN 47601

Circle 135 on reader service card

You are blind. A student. Facing four years of college. With about thirty-two textbooks to read. Plus fifty supplemental texts. How are you going to manage?

With Recording for the Blind. Since 1951, we've helped over 60,000 blind, perceptually and physically handicapped students get through school. By sending them recordings of the books they need to read. Free.

Recording for the Blind is non-profit, and supported by volunteers and contributions from people like you who can imagine what it's like to be blind.

Your tax-deductible donation will help our students meet their educational goals. We'd all be grateful.

If you want to know more about us, write:

Station G

Recording for the Blind, Inc.

20 Roszel Road

Princeton, New Jersey 08540

Recording for the Blind, Inc.
AN EDUCATIONAL LIFELINE.

Mentaur™

presents

Mac-Spansion Slot Technology™

Mentaur™ Composite Video Adaptor

Featuring Mac-Spansion Slot Technology.™ Installs in minutes, no soldering or wire splicing. Completely internal and self-contained. Provides Macintosh™ with a high quality, composite video signal and output port for large screen applications. FCC certification guaranteed. Substantial discounts available for educational institutions **\$199.95**

MacTools

What hobbyists and hackers have been waiting for! The two special tools needed to safely and correctly open the Macintosh.™ Previously only available to Apple™ dealers and developers **\$24.95**

MacTool Plans

Easily modify readily available items into your own MacTools. Step-by-step, fully illustrated. . . . **\$4.95**

Write: Mentaur Technologies
or P.O. Box 1467, San Marcos, TX 78666
Call: 512/396-1565

Mac-Spansion Slot Technology and Mentaur are trademarks of Mentaur Technologies. Macintosh and Apple are trademarks of Apple Computer, Inc.

Circle 140 on reader service card



DIGI GRAPHICS



☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆
INTRODUCES
THE **PICTURE DISK II**
☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆

300+ **USEFUL PICTURES FOR THE MAC**
(Compare ours to the competition!)

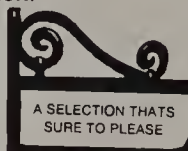


- ✿ Cartoons, Borders, Headings, and Illustrations. Themes from Astrology to Geography; from Nature to Special Holidays.
- ✿ Illustrate and highlight letters and reports.
- ✿ Customize our pictures to fit your needs with MacPaint.
- ✿ Will entertain kids for hours on end.
(A computerized Coloring Book!)
- ✿ Standard MacPaint files, filling 2 MacDiskettes!

ONLY
\$39.95
FOR
BOTH
DISKS

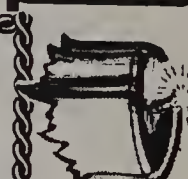
Your Mac is not complete without Picture Disk!

Order Toll Free: 1-800-922-4900 • 24 hrs.
(Orders Only!) or send check or money order to:
Digi-Graphics P.O. Box 273 Logan, Utah 84321
Mastercard and Visa accepted. Add \$2.00 Shipping & Handling
C.O.D. \$3.00 extra. Utah residents add 5% sales tax.



ALSO AVAILABLE FOR ONLY \$49.95
10 FULL SCREENS OF
YOUR PERSONAL PICTURES

We reproduce your pictures, photos, drawings, etc. to MacPaint files on a MacDiskette. Send to the above address for full details - Do Not Phone!

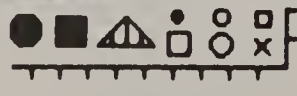


Circle 145 on reader service card

Graphics

For your Macintosh
with Macpaint/Macwrite

BROADWAY
City Futura
Orbit Parisian
Playbill



1 Superfonts: Six fresh typefaces for your Macintosh. Designed to add a professional look to your presentations and personality to your correspondence. **Only \$29.95**

2 Presentations: More than 100 borders, graphics and illustrations let you create professional quality graphics with your Macintosh. **\$29.95**

3 Trifles: Fun and games from your Macintosh. Over 100 illustrations to liven up your correspondence, party invitations, etc. **\$29.95**

Custom Painting: Do you need artwork transferred into a Macpaint file? We can produce it for you from any black and white illustration. Please call or write for more information.

Personal checks, VISA, and MasterCard accepted. Please add \$2.00 per disk for shipping and handling.

11510 Alejandro
Boise, ID 83709
(208) 322-8910

SOFTWARE
APPLE-CATIONS

"Macpaint" and "Macwrite" are trademarks of Apple Computer.

Circle 123 on reader service card

Mac.Transfer

Macintosh ↔ Apple Macintosh ↔ IBM pc Connection

- ✓ Move Basic programs ↔ Macintosh and your Apple or IBM pc.
- ✓ Move word processor files such as Word Star, Apple Writer, Appleworks, Screenwriter, PIE Writer ↔ Macintosh.
- ✓ Move SYLK, DIF and data files ↔ Macintosh and your Apple or IBM pc.
- ✓ Easy to use - complete instructions and diagrams for making connections via modem or by using the Macintosh Imagewriter cable and a serial interface.
- ✓ 2 program diskettes. One for the Macintosh and one for your Apple or IBM pc.
- ✓ Available NOW.

Apple version \$45.00 **PC version \$60.00**
Includes both ProDOS and DOS 3.3 versions.

We have been helping Apple owners move data for over 5 years with DATA CAPTURE™ programs.

Software designed with you in mind.

Southeastern Software

7743 Briarwood Drive
New Orleans, LA 70128

504/246-8438
504/246-7937

Circle 91 on reader service card



THE MICRO-IMAGER™ VIDEO DIGITIZING SYSTEM CAPTURE/STORE/PRINT

Captures any image for transfer into your Macintosh. You can edit with MacPaint™, store, retrieve and print the image at will.

Two capture modes: two-shade for line drawings and diagrams and six-shade for pictures and portraits.

Call or write **Servidyne® Systems, Inc.**

• 1735 DeFoor Place N.W. • Box 93846 • Atlanta, GA 30377 • 404/352-2050

MacPaint™ is a trademark of Apple Computer, Inc. Macintosh is a trademark licensed to Apple Computer, Inc.

Circle 102 on reader service card

Mouse Trapped?

Are you being manipulated by your mouse? Does it force you to clean your desk every time you want to use it? If so, you need portable working space. Use a Mouse Pad (pat. pending). Our pad is made from the same high-quality plastic as your Macintosh.™ It's non-skid, no-mar base and protective ridge will help you keep your mouse in its place; use it in your lap, on a tablecloth, anywhere. Our pad fits snugly in your carrying case. Don't let a mouse manipulate you. Take Control! Use a Mouse Pad!

Music Character Set

A complete sheet music development package. Contains blank staff sheets for all keys, complete character sets and chord library. For use with Mac Paint.™

Mouse Pad \$12.95

Music Character Set \$24.95

Use our 24-hour order line with your MasterCard or Visa. Personal checks welcome. We pay shipping within continental USA; outside orders add \$3.00 P & H. Satisfaction guaranteed. California residents add 6.5% tax. Macintosh & Mac Paint are registered trademarks of Apple Computers, Inc.

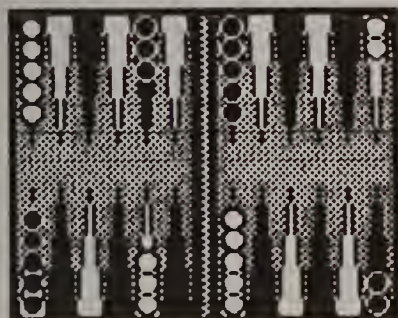


South Bay Software

Box 969 Millbrae, CA 94030 (415) 579-5455

Circle 121 on reader service card

FOR THE MACINTOSH



Triple Play

PRESENTS:

BACKGAMMON

Centuries old
board and dice game

MANCALA

Original board game
of pits and pebbles

DEDUCE

Ancient game of
deductive reasoning

These first-rate versions of classic games are written in compiled PASCAL, run on the 128K Mac and are presented on GAME DISK NUMBER ONE.

Compete for \$4000 in prizes in the

BACKGAMMON TRIPLE PLAY-OFF

Details are on the disk

Available now for \$39.50

Money back guarantee

Orders accepted by check, VISA or MasterCard

**TRIPLE
PLAY™**

PO Box 6354 A
Lafayette, IN 47903
(317) 742-5369

Or order through **3rd Base™** Software Registry
modem (317) 423-1010

Circle 122 on reader service card



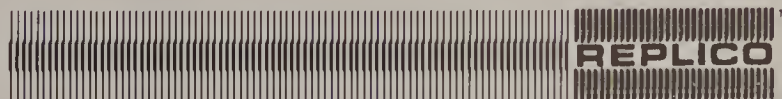
Macintosh™ 3 1/2" Diskette Duplication

- **Complete Duplication Capability**
- **Software Protection Available**
- **100% Quality Control**

REPLICO's complete duplication service includes: protection, serialization, packaging, and kit assembly. Other supported formats, for systems using 3.5" media, are also available. Additional formats available upon request.

All 5.25" formats are available at competitive prices. Call today for further information.

Macintosh is a registered trademark of Apple Computer, Inc.

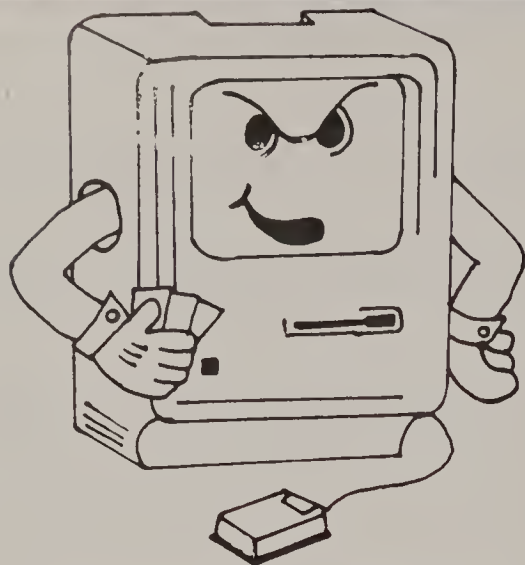


Replico Technologies Corporation
834 Charcot Avenue
San Jose, California 95131
408/945-1697

Circle 39 on reader service card

CASINO FUN!

AVAILABLE NOW!



**Can You Beat
The Mac?**

**Black Jack
For The
Macintosh™**

**Five-Card Draw
Poker for the
Macintosh™**

Mac-Jack™

- Full Las-Vegas style 52-card game
- On the Mac, it comes ALIVE, like a real game
- ALL MOUSE ACTION – easy to play

List Price **\$39.95**

Mac-Poker™

**Real Poker! The Mac becomes a
“person” who may bet you,
raise you, or bluff!**

- Superb animated graphics
- Wild betting action
- All mouse-driven

Add 6½% Sales Tax for Calif. Residents.
List Price **\$39.95**

ORDER TODAY!



Ask Your Dealer

– OR –

You can order direct from

Data Pak, pre-payment or C.O.D.

For pre-payment we pay for shipping

(818) 905-6419

14755 Ventura Blvd. Sherman Oaks, CA 91403

Circle 159 on reader service card

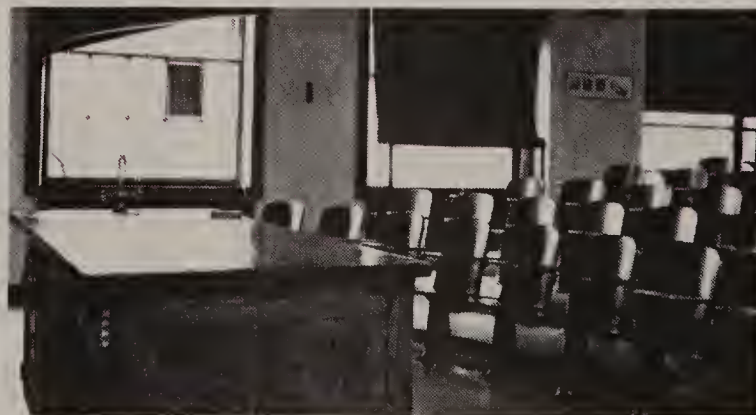
Corporate giving.
Without it, a lot of important things
might go out of business.

A lot of organizations in a lot of different fields could barely exist without help from corporations.

To their credit, a great many companies realize this.

Every year for the past ten years, corporate giving has gone up. And that's something the entire corporate community can take pride in.

There are so many



ways a corporation can give. So many ways to lend a hand. The fact is, when corporate giving thrives, so do the organizations it supports. And everyone profits.



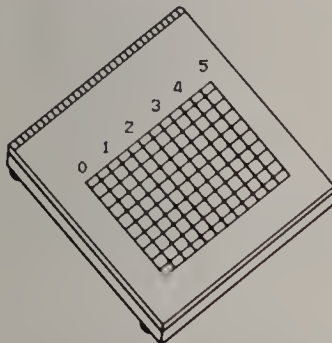
Lend a hand

Macintosh Programmers

If you program the Macintosh, you need the

Screen Coordinator by Starcor

The *Screen Coordinator* helps you design Macintosh screens (windows, dialogs, etc.) by quickly determining the locations and enclosing rectangles of items on the screen directly from a MacPaint print out.



precision
acrylic
overlay

high resolution
grid

\$29.95 + C.O.D. shipping

(Texas residents add 5% sales tax)

send check or money order to:

STARCOR
6300 La Calma Ste. 100
Austin, TX 78752
(512) 495-6726

Dealer Inquiries Welcome

Macintosh and MacPaint are trademarks of
Apple Computer Corp.

Circle 155 on reader service card

SONY® \$39.95

(Box of 10)

3 1/2"

Micro Diskettes



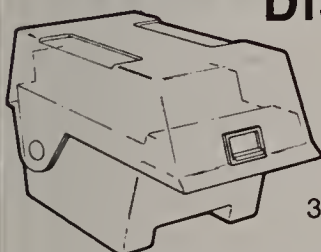
DISK BANK®

Media Mate 3

\$12.50

Stores 30

3 1/2" Micro Diskettes



Color MacPrinter Ribbons

(Red, Grn, Brwn, Purple, Bl, Yel & Blk.)

\$8.95

Swivelable & Tilttable Monitor

Stand for Macintosh™ \$24.95

Send check or money order to:

O·E·I·

P.O. BOX 53259, SAN JOSE, CA 95153

5931 TANDERA, SAN JOSE, CA 95123

C.O.D. phone orders accepted

(408) 370-6699

Calif. residents add 6 1/2% sales tax
add \$2.00 for shipping and handling

Circle 85 on reader service card

**PRESENTING
THE MEGAMAX
C COMPILER**

FEATURING:
• IN-LINE ASSEMBLY • ONE PASS
COMPIATION • SUPPORT OF DYNAMIC
OVERLAYS • FULL ACCESS OF MACINTOSH
TOOLBOX ROUTINES • AND MUCH MORE ...
DEVELOPMENT SYSTEM PACKAGE INCLUDES:
• FULL-SCALE IMPLEMENTATION (K&R) C
COMPILER • THE STANDARD C LIBRARY • ROM
ROUTINES LIBRARY • LINKER • LIBRARIAN AND
DOCUMENTATION ... **\$299.95**

DEALER AND USER GROUP INQUIRES INVITED
FOR MORE INFORMATION OR TO ORDER CALL
OR WRITE: **Megamax, Inc.** BOX 6015,
DEPT. W WACO, TX 76706 (214) 987-4931

VISA, MC,
AMER. EXP.
ACCEPTED
Texas Residents Include
Applicable Sales Tax.

MACINTOSH IS A
REGISTERED TRADEMARK
OF APPLE COMPUTER INC.

Circle 109 on reader service card

INNOVATIVE
SOFTWARE

Presents . . .

MacCHECK

- Handles 1200 Checks
- Budget Calculations
- Unlimited Categories
- Password Access
- Bar Graphs
- Speed Check Writing
- Multiple Journals
- Time Value of Money
- Requires MS BASIC™
(Microsoft Corporation)

ONLY

\$3.00

\$39⁹⁵

+ POSTAGE &
HANDLING

(CA RESIDENTS INCLD \$2.40 TAX)

SEND CHECK OR MONEY ORDER TO:

4909 STOCKDALE HWY.
SUITE 169
BAKERSFIELD, CA 93309

Circle 137 on reader service card

MACWORLD BACK ISSUES!

Macworld back issues are now available! Within the U.S. and Canada, the cost is \$6 per copy (postage included). Outside the U.S. and Canada, the price, including airmail delivery, is \$10 per copy. Please allow 4-6 weeks for delivery. We regret we are unable to bill you or accept credit card orders for back issues.

To order: Indicate the issues you want below and enclose a check (in U.S. funds) with this form. Mail to *Macworld* Back Issues, 555 De Haro Street, San Francisco, CA 94107.

Name _____

Company _____

Address _____

City, State, Zip _____

☐ Vol. 1 No. 1 Premier Issue
Inside the Macintosh

☐ Vol. 1 No. 2 May/June, 1984
Macintosh Charts

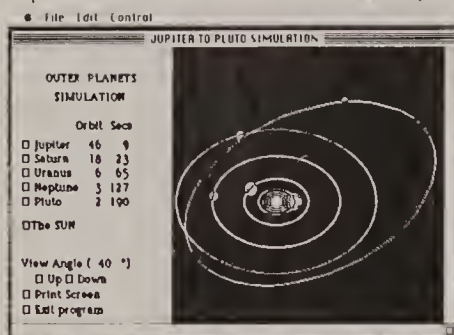
☐ Vol. 1 No. 3 July/August,
1984
Macintosh Communications

☐ Vol. 1 No. 4 September/
October, 1984
Macintosh Software

Learn About

THE SOLAR SYSTEM AND HALLEY'S COMET

- Real-time graphic simulation of nine planets rotating around the sun.
- Separate simulation for orbits of:
 - Mercury to Mars
 - Earth to Saturn
 - Jupiter to Pluto
- View the simulated orbits from different angles.
- Size comparisons for the 9 planets.
- Simulation of Halley's comet's highly elliptical 76-year-period orbit.
- Important facts about each planet and Halley's comet available on separate display pages.
- Interactive test program adapted for three levels:
 1. Beginner — science-interested ages 8 to 12
 2. Intermediate — ages 13 to 16
 3. Advanced — ages 17 to adult
- Requires MSBASIC MS is a trademark of Microsoft Corporation.



MILLETT SOFTWARE
146 West 255 South
Orem, UT 84058
(801) 224-6841

\$24.95 + \$3.00 shipping & handling

VISA or MasterCard accepted

Circle 147 on reader service card

ARTWARE FOLIO

is TWO Mac disks PACKED with INTEGRATED IMAGES that let you CREATE PRESENTATIONS, ILLUSTRATIONS, STORYBOARDS, ADS and COMIC STRIPS!!



©1984 Kyra Corp.

ONLY \$59.95

Available at your local Macintosh™ dealer
or from

KYRA Corp.

3864 Bayberry Lane
Seaford, NY 11783

516-783-6244

Macintosh™ is a trademark licensed to Apple Computer, Inc.

Circle 108 on reader service card

Super Fonts™

Five awesome fonts for
your Macintosh™

•Mac-Transportation



•Atlantic City



•Electronic Symbols



•Calligraphy



•Mac-Writer

Also: font demo programs

- Blackjack
- requires Ms-Basic™
- Solitaire
- Craps

\$25.00

Send check or money order to:

Creative Expressions

P.O. Box 3312

Peabody, MA 01961

Circle 136 on reader service card

ColorPrint

- Automates printing of multi-color overlays.
- Print up to 8 individual colors.
- Manual includes a 'hints' section and a tutorial with examples.
- Use the Apple ImageWriter™ and Scribe™ printer.
- Make transparencies with the Scribes™ printer.
- Use with MacPaint™ and 2 or more color printer ribbons

See your local dealer or send check or money order for \$49.95 (plus 6% tax in Okla.) to:

Esoft Enterprises
P.O. Box 179
Owasso, OK 74055

Esoft Enterprises
(918) 272-7616

MacPaint, ImageWriter, & Scribe are trademarks of Apple Computer, Inc.

Circle 61 on reader service card

MAC DEVELOPERS GUIDE

A valuable reference for
developers on a Mac diskette

- How to get started
- Apple support
- Details of Mac development
- Overview of development documentation
- Undocumented programming hints
- Abstract of development routines

WRITTEN BY DEVELOPERS
FOR DEVELOPERS

Send \$24.95 to:

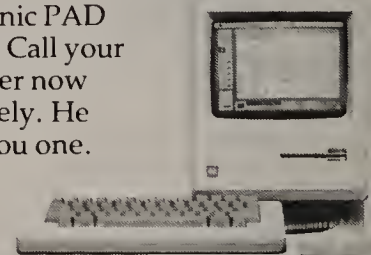
MicroStrategies
11409 28th Dr. SE
Everett, WA 98204

Rune Software

The \$37,000 Question

Up to now, professional computer-aided circuit design has only been available to those with the purchase price of a mini computer — for a total, with software, of at least \$40,000. Today the Electronic PAD from Rune Software, coupled with a Macintosh and an Imagewriter printer, will assist in the design, simulation, and debugging of your circuit with dependable, professional results — for a total of about \$3000. That's a savings of \$37,000.

The Electronic PAD from Rune. Call your Apple Dealer now and ask nicely. He may save you one.



P.O. Box 971,
Pacifica, CA 94044
(415) 355-4848

RUNE
SOFTWARE

Macintosh and Imagewriter are trademarks of Apple Computer, Inc.

Circle 139 on reader service card

Product Index

Reader
Service
Number

Reader
Service
Number

Reader
Service
Number

Reader
Service
Number

■ Software

Business

- 64 Creighton Development, Inc., 97
- 101 Data Food, 188
- Hayden Software, 83
- 125 Layered, Inc., 140-141
- 153 Human Edge Software, 174
- 51 Magnum Software, 32
- 86 Megahaus, 17
- 88 Megahaus, 21
- 94 Softdesign, 123
- 42 Videx, Inc., 100

Communications

- 69 Dow Jones, 24, 25
- 73 I-O Tech, 188
- 91 Southeastern Software, 190

Data Management

- 46 Brock Software Products, 137
- 66 Computer Software Design, 111
- 81 DeskTop Software Corp., 122
- 114 Forethought, Inc., 108-109
- Hayden Software Company, 84
- 87 Megahaus, 19
- 13 Odesta, 12-13
- 38 Organizational Software Corp., 107
- 77 ProVUE Development Corp., 42-43
- 26 Rio Grande Software, 27
- Software Publishing Corp., 95

- 100 Stoneware, 65
- 54 Telos Software Products, 38-39

Educational

- 80 Alfred Publishing Company, Inc., 121
- 93 Axlon, Inc., 150
- 147 Millett Software, 194
- 74 Palantir Software, 175
- 141 Queue, Inc., 105

Entertainment/Strategy

- 80 Alfred Publishing Company, Inc., 121
- 93 Axlon, Inc., 150
- 138 Blue Chip Software, 173
- 151 CBS Software, 138
- 120 Challenger Software, 20
- Computing Capabilities Corp., 187
- 159 Data Pak Software, 192
- 60 Expert Systems, L.T.D., 160
- 76 Harvard Associates, 189
- Hayden Software Company, 79, 80, 81
- 43 Infocom, 40
- 31 Mark of the Unicorn, 138
- 47 McCarron-Dial Systems, 159
- 37 Miles Computing, Inc., 58-59
- 143 Mindsport-General Computer, 28-29
- 70 Mirage Concepts, 67
- Newsoft, 178
- 150 Penguin Software, 151
- 127 Priority Software, 110
- 141 Queue, Inc., 105
- 133 Scarborough Systems, 8
- 118 Screenplay, 69, 139
- 22 Soft Life, 101, 162
- 122 Triple Play, 191
- 42 Videx, Inc., 98

Financial

- 146 Apropos Software, Inc., 106
- 117 Monogram, Inc., 152
- 92 P³, 30, 96
- 124 Peachtree Software, 14, 161
- 49 Real Data, Inc., 188

Graphics

- 93 Axlon, Inc., 150
- 136 Creative Expressions, 194
- 126 Design Loft, 172
- 145 Digi-Graphics, 191
- Hayden Software Company, 82
- 108 Kyra Corp., 194
- 51 Magnum Software, 32
- 37 Miles Computing, 58-59
- 36 Reference Corporation, 188
- 139 Rune Enterprises, 194
- 123 Software Apple-Cations, 190
- 29 T/Maker Graphics, 31

Languages/Development Systems

- 129 Creative Solutions, 163
- 56 Expertelligence, Inc., 165
- 40 Hippopotamus Software, 196

- 149 IQ Software, 178
- 109 Megamax, Inc., 193
- Microsoft, 5

Miscellaneous

- 128 Brownbag Software, 172
- 89 Computer Identities, 66
- MicroStrategies, 194
- 39 Replico Technologies, 191
- 79 Software Arts, 99
- 121 South Bay Software, 190
- 104 Tech 2000 Software, Inc., 165

Personal Business/Home

- 80 Alfred Publishing Company, Inc., 121
- 146 Apropos Software, Inc., 106
- 95 Creighton Development, Inc., 97
- Hayden Software Company, 80, 81
- 137 Innovative Software, 193
- 117 Monogram, Inc., 152
- 94 Softdesign, 123

Word Processing/Spelling Checkers

- 110 Assimilation Process, 6-7
- 95 Creighton Development, Inc., 56
- Hayden Software Company, 85

■ Hardware

Digitizers

- 90 New Image Technology, 176-177
- 102 Servidyne, Inc., 191

Hard Disks

- 15 Davong Systems, IBC
- 24 Micro-Design, 26
- 132 Sunol Systems, 149
- 14 Tecmar, 1, BC

Miscellaneous

- 110 Assimilation Process, 6-7
- 32 Haba Systems, Inc., 54-55
- 73 I-O Tech, 188
- 119 Macadam Publishing, Inc., 186
- 140 Mentaur Technologies, 190

Modems

- 11 Kensington Microware, 22
- 72 Microcom, Inc., 18
- 75 Novation, Inc., 33

Printers/Printer Accessories

- 110 Assimilation Process, 6-7
- 64 Creighton Development, Inc., 41
- 61 Esoft Enterprises, 194
- 142 NEC, 57
- 135 Synergy Products, 189

■ Accessories

Carrying Cases

- 28 MACPACK, 100
- 34 Optimum Computer Luggage, 136

Disks

- 21 BASF, 124-125
- 154 Comark, Inc., 158
- 85 O.E.I., 193

Miscellaneous

- 130 Designware Company, 94
- 83 Ergotron, Inc., 11
- 11 Kensington Microware, 22
- MacStation, IFC
- 85 O.E.I., 193
- 158 Pneu-Mouse Corporation, 112
- 155 Starcor, 193

■ Mail Order

- 33 The Bottom Line, 187
- 98 Compuclassics, 91
- 4 MacConnection, 113-114, 115
- 3 Micro Flash Computer Systems, 104
- 85 O.E.I., 193
- 4 PC Connection, 113-114, 115
- 45 PC Network, 153
- 55 Telasoft, 186

■ Services

- 107 International Apple Core, 148
- 2 Manhattan Graphics Corp., 179

Advertisers Index

Reader Service Number		Reader Service Number		Reader Service Number		Reader Service Number	
80	Alfred Publishing Company, Inc., 121	159	Data Pak Software, Inc., 192	149	IQ Software, 178	45	PC Network, 153
146	Appropos Software, Inc., 106	15	Davong Systems, IBC	11	Kensington Microware, 22	124	Peachtree Software, 14, 161
110	Assimilation Process, 6-7	126	Design Loft, 172	108	Kyra Corp., 194	150	Penguin Software, 151
93	Axlon, Inc., 150	130	Designware Co., 94	125	Layered, Inc., 140-141	158	Pneu-Mouse Corporation, 112
21	BASE, 124-125	81	Desktop Software Corp., 122	119	Macadam Publishing, Inc., 186	77	ProVUE Development Corporation, 42-43
138	Blue Chip Software, Inc., 173	145	Digi-Graphics, 191	4	MacConnection, 113-114, 115	127	Priority Software, Inc., 110
33	The Bottom Line, 187	69	Dow Jones, 24, 25	28	MACPACK, 100	141	Queue, Inc., 105
46	Brock Software Products, 137	83	Ergotron, Inc., 11	—	MacStation, IFC	49	Real Data, Inc., 188
128	Brown Bag Software, 172	61	Esoft Enterprises, 194	51	Magnum Software, 32	36	Reference Corporation, 188
151	CBS Software, 138	60	Expert Systems L.T.D., 160	2	Manhattan Graphics Corporation, 179	39	Replico Technologies, 191
120	Challenger Software, 20	56	Expertelligence, Inc., 165	31	Mark of the Unicorn, 138	26	Rio Grande Software, 27
154	Comark, Inc., 158	114	Forethought, Inc., 108-109	47	McCarron-Dial Systems, 159	139	Rune Enterprises, 194
98	Compuclassics, 91	32	Haba Systems, Inc., 54-55	86	Megahaus, 17	133	Scarborough Systems, 8
89	Computer Identics, 66	76	Harvard Associates, 189	87	Megahaus, 19	118	Screenplay, 69, 139
66	Computer Software Design, 111	—	Hayden Software Company, 79, 80, 81, 82, 83, 84, 85	88	Megahaus, 21	102	Servidyne, Inc., 191
—	Computing Capabilities Corporation, 187	40	Hippopotamus Software, 196	109	Megamax, Inc., 193	94	Softdesign, 123
136	Creative Expressions, 194	153	Human Edge Software, 174	140	Mentaur Technologies, 190	22	Soft-Life Corp., 101, 162
129	Creative Solutions, Inc., 163	43	Infocom, 40	72	Microcom, Inc., 18	123	Software Apple-Cations, 190
64	Creighton Development, Inc., 41, 97	137	Innovative Software, 193	24	Micro-Design, 26	79	Software Arts, Inc., 99
95	Creighton Development, Inc., 56, 97	107	International Apple Core, 148	3	Micro Flash Computer Systems, 104	—	Software Publishing Corporation, 95
101	Data Food, 188	73	I-O Tech, 188	—	Microsoft, 5	121	South Bay Software, 190
				—	MicroStrategies, 194	91	Southeastern Software, 190
				37	Miles Computing, Inc., 58-59	155	Starcor, 193
				147	Millet Software, 194	100	Stoneware, 65
				143	Mindsport-General Computer, 28-29	132	Sunol Systems, 149
				70	Mirage Concepts, Inc., 67	135	Synergy Products, 189
				117	Monogram, Inc., 152	29	T/Maker Graphics, 31
				142	NEC, 57	104	Tech 2000 Software, Inc., 165
				90	New Image Technology, 176-177	14	Tecmar, Inc., 1, BC
				—	Newsoft, 178	55	Telasoft, 186
				75	Novation, 33	54	Telos Software Products, 38-39
				13	Odesta, 12-13	122	Triple Play, 191
				85	O.E.I., 193	42	Videx, Inc., 98
				34	Optimum Computer Luggage, 136		
				38	Organizational Software Corp., 107		
				92	P ³ , Inc., 30, 96		
				74	Palantir, 175		
				4	PC Connection, 113-114, 115		

NOW SHIPPING!!

HIPPO-C™ Level 1

- A friendly, powerful C environment which allows you to quickly edit, compile, link, and execute C programs on a standard 128K single-drive Macintosh™. Produces "double-clickable" applications.
- Comes with an editor, compiler, linker, symbolic debugger, C library, on-line C tutorial, and a shell command processor. The compiler follows the Kernighan and Ritchie C definition, except for floating point. Allows approximately 64K for user programs and data. Provides convenient access to 383 Macintosh Toolbox and QuickDraw routines. All software is included - nothing else to buy.
- Documentation (includes information on Hippo-C and selected Toolbox and QuickDraw routines) and sample programs.
- \$149.95

HIPPOPOTAMUS
SOFTWARE

1250 Oakmead Parkway Suite 210
Sunnyvale, CA 94086
(408) 730-2601

Institutional and dealer inquiries welcome. We accept VISA, MasterCard, cashier's checks, money orders, and personal checks (personal checks take 2 weeks to clear). California residents add local sales tax. Please include \$10 for shipping and handling. Macintosh is a trademark of Apple Computer, Inc. Hippo-C is a trademark of Hippopotamus Software. Please allow 1-2 weeks for delivery. Price, availability, and specifications subject to change without notice.

Circle 40 on reader service card

Reader Inquiry Service

Would you like further information on a product that's advertised in *Macworld*? Well, it's easy and best of all—FREE!

Just follow these simple instructions:

- Print or type your name and address on the attached card. One card per person, please.
- Circle the number(s) on the card corresponding to the Reader Service number in the Advertiser Index.
- Drop the card in a mailbox and wait to receive the literature that will be mailed to you free of charge from the manufacturer.

The address on the attached card is for product information only.

Send editorial comments or inquiries to: *Macworld*, 555 De Haro St., San Francisco, CA 94107.

MACWORLD

The Macintosh Magazine

1 2 3 4 5 6 7 8 9 10 11 12 13
14 15 16 17 18 19 20 21 22 23 24 25 26
27 28 29 30 31 32 33 34 35 36 37 38 39
40 41 42 43 44 45 46 47 48 49 50 51 52
53 54 55 56 57 58 59 60 61 62 63 64 65
66 67 68 69 70 71 72 73 74 75 76 77 78
79 80 81 82 83 84 85 86 87 88 89 90 91
92 93 94 95 96 97 98 99 100 101 102 103 104
105 106 107 108 109 110 111 112 113 114 115 116 117
118 119 120 121 122 123 124 125 126 127 128 129 130

Name

Company

Address

City/State/Zip

(Zip code needed to insure delivery)

☐ Please bill me \$24 for a 1-year (12-issue) subscription to *Macworld* (U.S. and Canada only).

Valid through 2/28/85

1/6

JM951

Survey

Will you please take a few minutes to answer the following questions? Your answers will be kept in *strict confidence* and used only in combination with others to develop a profile that we will use to learn more about our readers.

MACWORLD

The Macintosh Magazine

A. Please check whether you are:

☐ Male ☐ Female

B. What is your age?

1. ☐ 18-24 2. ☐ 25-34 3. ☐ 35-44
4. ☐ 45-54 5. ☐ 55+

C. Please state your title and industry:

D. What was the last level of education you completed?

1. ☐ Completed high school
2. ☐ Some college
3. ☐ Completed college
4. ☐ Post-graduate work
5. ☐ Post-graduate degree

E. What category best describes your family's total annual income before taxes?

1. ☐ Under \$15,000 2. ☐ \$15,000-\$24,999
3. ☐ \$25,000-\$34,999 4. ☐ \$35,000-\$49,999
5. ☐ \$50,000-\$74,999 6. ☐ \$75,000 or more

F. Do you currently own a Macintosh?

☐ Yes ☐ No

Are you thinking of purchasing one?

☐ Yes ☐ No

If yes: ☐ For your home ☐ For your business ☐ For use in both

G. Do you own another computer or use one at work? Please indicate the system(s):

H. Computer experience:

☐ less than a year ☐ 2-3 years ☐ 4 or more years

I. What kind of software programs do you find most useful?

☐ Word processing ☐ Spreadsheets ☐ Integrated packages
☐ Graphics ☐ Accounting ☐ Other _____
☐ Data base management ☐ Games/entertainment _____

J. Programming:

☐ BASIC ☐ PASCAL ☐ FORTRAN
☐ FORTH ☐ COBOL ☐ OTHER(s) _____

K. What kind of articles interest you?

☐ 1. Software reviews ☐ 2. Hardware reviews
☐ 3. Personal/Home management ☐ 4. Games/entertainment
☐ 5. Education ☐ 6. Communications
☐ 7. New product news

BUSINESS REPLY MAIL

FIRST CLASS PERMIT NO. 27346 PHILADELPHIA, PA

POSTAGE WILL BE PAID BY ADDRESSEE

Macworld
P.O. Box 13817
Philadelphia, PA 19101

NO POSTAGE
NECESSARY
IF MAILED IN
UNITED STATES

BUSINESS REPLY MAIL

FIRST CLASS PERMIT NO. 22094 SAN FRANCISCO, CA

POSTAGE WILL BE PAID BY ADDRESSEE

Macworld Survey
555 De Haro St.
San Francisco, CA 94107

NO POSTAGE
NECESSARY
IF MAILED IN
UNITED STATES

Meet Your New Business Team. Macintosh & Davong.



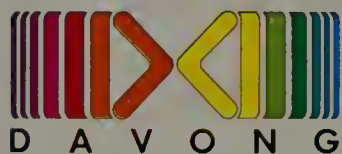
Apple's new Macintosh™ is the most exciting development in personal computing since the original Apples started it all.

Teamed with Davong peripherals, the incredibly easy to use Macintosh becomes a powerful, flexible and expandable business tool.

Available at more than 1,000 Davong dealers nationwide is the new Davong Mac Disk system, providing from 5 to 40 megabytes of hard disk storage. Mac Disk gives you the increased capacity and enhanced functionality you need for your business applications. All at a very reasonable price and with no sacrifice in the speed and ease of use built into your Macintosh.

And coming very soon from Davong is a data subsystem which supports tape, disk and a multi-tasking local area networking system to allow all of the Macintoshes in your organization to share information, programs, and the advantages of Mac Disk.

See your local Davong Dealer today for details.



Davong Systems, Inc.
217 Humboldt Court
Sunnyvale, CA 94089
(408) 734-4900
Telex: 176386



Apple and Macintosh are trademarks of Apple Computer Inc.

Circle 15 on reader service card



You can fill a Tecmar Massfile with all of these. Twice.

Great authors need great storage. Everyone from Aeschylus to Zola can put their thoughts to rest in Tecmar's Massfile.

Like great authors great businesses (or soon to be great) need great storage. If your business demands the full capability of your **IBM PC** or **Apple Lisa**, you should demand the features of Tecmar's Massfile.

Mainframe Storage for Micros — access up to 74 Megabytes from your personal computer.

Reliability & Performance — with a Tecmar Massfile you have the data integrity and reliability normally found only in large mini and mainframe computers. Massfile is very fast, too. You get a disk drive average access time of 35 milliseconds and a data transfer rate of up to 1.2 megabytes/second.



Fast, accurate backups — make backups and archival copies for all your important data (up to 0.5 megabytes/second) with the built-in streaming tape cartridge system. That means backing up all 74 Megabytes in less than 20 minutes.

Easy to use — use your Tecmar Massfile just like any disk on your IBM PC or Apple Lisa. You will find that Massfile is ideal for use with Unix, Xenix, networking, and/or large data bases.

All Tecmar products are backed with a commitment to quality and innovation. Protect your investment by using value-added hardware from Tecmar. For additional information contact Tecmar, Inc., 6225 Cochran Road, Cleveland, Ohio 44139; (216) 349-0600.

Circle 14 on reader service card

Tecmar

THE POWER BEHIND THE PC